Resources, Regimes and Rebellion

A Critical Assessment of the Greed & Grievance Model of Civil Conflict

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Preface

The International Peace Research Institute, Oslo (PRIO) has provided me with an excellent research and social environment. The atmosphere at PRIO and support from students and staff has been invaluable during the process of writing this thesis.

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Despite the generous support from the above-mentioned people—the quality of the final product and the unavoidable errors remain the author's sole responsibility. Finally, I thank my Michel, my family and friends, especially Kristin and Rebecca, for providing support, comfort, wine and housing. I am grateful and privileged to have such wonderful people in my (non-thesis) life.

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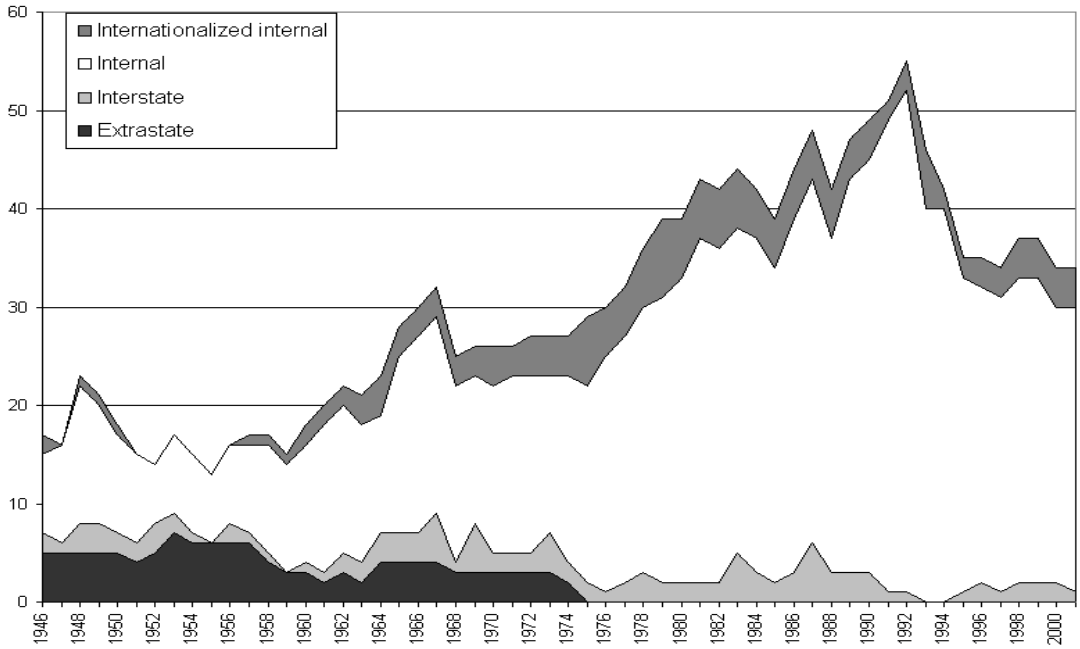
1. Introduction

Armed conflicts have inflicted and will continue to inflict enormous human suffering in addition to severely damage societies, economies and the environment. 'Peace on earth' is at best a very distant goal, but it is certainly worth striving for and researching on. Enhancing our understanding of the underlying causes and dynamics of armed conflict better equips the international community to limit the number, reduce the intensity, and facilitate the ending of armed conflicts.

For the most of the time since the Second World War, civil war has been the dominant type of conflict. In 2001, 33 out of 34 armed conflicts with more than 25 battle-related casualties were domestic and internationalized civil wars. Armed conflict occurred in 28 different countries, and in 11 of these conflicts more than 1,000 people were killed (Gleditsch et al., 2002). An overview of the different types of conflict is presented in Figure 1.

Figure 1. *Number of Armed Conflicts by Type 1946-2001*

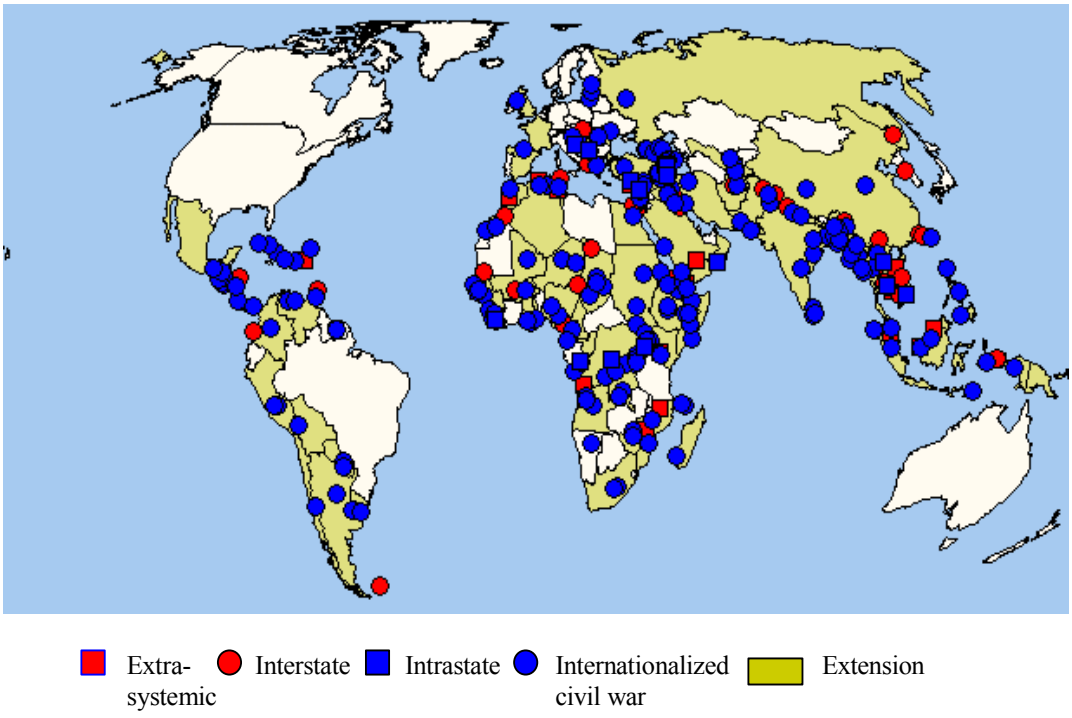


* Numbers based on PRIO/Uppsala Conflict Dataset (Gleditsch et al., 2002)

Wars between and war within states are two rather different phenomena, and are usually analyzed from different theoretical frameworks. However, the category 'internationalized civil war' includes conflicts where international actors interfere in civil war, and blurs the distinction between interstate and intrastate conflict. This thesis focuses on the causes of intrastate conflict, but considers 'internationalized civil war' as more of a civil war than interstate war, and includes these conflicts in the analysis. Both civil war and international civil war have their origins in domestic relations, even though the warring parties might ask for help or be supported by external actors.

Civil war occurs more frequently in poor countries, and worsens the prospects for development, stability, prosperity and peace. Armed conflicts are not evenly spread over the globe. The map in Figure 2 visually presents an overview of where different types of conflicts have taken place since World War II.

Figure 2. *Armed Conflicts 1946-2000*



* Numbers based on PRIO/Uppsala Conflict Dataset (Gleditsch et al., 2002). Conflicts for 2001 could not be displayed because the computer program generating the map has not yet been updated for 2001

Studies of why civil wars endure and how they end constitute an important part of research on civil war, but this thesis narrows its analysis to the study of onset of civil war: what characterizes countries where civil war breaks out, and how do they differ from those that continue to remain peaceful? Table 1 presents an overview of global and regional conflict onsets in the entire PRIO/Uppsala dataset as well as the period covered by this study (1960-97). Sub-Saharan Africa, Asia and the Middle East have been much more prone to conflict than the Americas and Europe (including the Caucasus).

Table 1. *Regional Distribution of Civil War Onsets and Armed Civil Conflict Onsets*

1946-2001	**Americas**	**Europe and Caucasus**	**Sub-Saharan Africa**	**Middle East and North Africa**	**Asia**	**Sum**
Civil Wars	11	12	28	13	30	94
Percentage of country years	1.0	0.8	1.8	1.6	2.6	1.6
Armed Civil Conflicts	21	24	63	23	46	177
Percentage of country years	2.1	1.6	4.4	3.5	4.9	3.2
1960-1999						
Civil Wars	10	12	27	12	27	88
Percentage of country years	1.1	0.9	1,8	1.7	2.7	1.6
Armed Civil Conflicts	19	24	60	20	40	163
Percentage of country years	2.2	1.9	4.4	3.4	4.8	3.3

* Numbers based on PRIO/Uppsala Conflict Dataset (Gleditsch et al., 2002)

The causes of civil war are rooted in numerous sources and complex dynamics. Explanations for the outbreak of conflicts are many, and the emphasis differs. Traditionally, the explanations for civil war have been attributed to ethnic and religious hatred, economic, political and social discrimination. A language of grievance and suffering dominates the conflicting parties' rhetoric, media headlines as well as researchers' agenda.

Turning somewhat away from the traditional grievance-based rhetoric, some researchers have recently started to emphasize a more cynical explanation, suggesting that *greed* rather than *grievance* serves as a better theoretical and empirical explanation for civil conflict 'The true cause of much civil war is not the loud discourse of grievance, but the silent force of greed' (Collier, 1999: 8). Lately, more focus has been paid to the economic basis for rebellion. The World Bank has established a re-

search program on 'The Economics of Civil War, Crime and Violence,'[1] and numerous works on civil war, economic growth and natural resources have been produced (Addison, Billon & Murshed, 2001; Auty, 2000, 2001; Collier & Hoeffler, 1999, 2001, 2002; de Soysa, 2002; Hauge & Ellingsen, 1998; Homer-Dixon, 1999, 2000; Le Billon, 2001; Sachs & Warner, 1995). This new literature on civil war emphasizes the crucial importance of access to finances, either in the form of foreign support for the insurgency, the availability to raise revenue through the extraction of resource rents, or indirectly through 'taxing' goods passing through rebel-controlled territory. With the end of the Cold War, foreign support for rebel groups has decreased, and rebel movements have increasingly been forced to find their own source of revenue. In this new conflict environment, the line between civil war and crime has become increasingly blurred.

This thesis bases its analysis on the models developed by Paul Collier and Anke Hoeffler at the Center for the Study of African Economies, Oxford University and the World Bank. In several papers Collier & Hoeffler (1998, 1999, 2001, 2002) have used a 'greed vs. grievance' perspective to investigate the causes of civil conflict. Their model and theoretical argument has gained prominence in the quantitative field of the study of civil war, and has provided valuable insights—in particular into the role of economic factors generating civil war. A testimony to this is the February 2002 issue of the *Journal of Conflict Resolution*. Paul Collier co-edited a special issue entitled 'Understanding Civil War,' and much of the research was based within the framework of Collier & Hoeffler's model (Collier & Sambanis, 2002). Collier & Hoeffler's recent and *unpublished* report for the World Bank 'Greed or Grievance in Civil War' has already been cited 16 times in academic journals.[2] Collier heads the Development Research Department at the World Bank, and was instrumental in setting up the 'The Economics of Civil War, Crime and Violence' research program. The research conducted under the auspices of Collier shapes to some extent the policies of the World Bank. It is of paramount importance that this research is scrutinized and critically assessed.

[1] http://www.worldbank.org/research/conflict/
[2] Search conducted on the ISI Web of Science on 4 October 2002.

In brief, Collier & Hoeffler's model present two competing and complementary explanations for civil war: atypical levels of grievance or atypical opportunities for forming a rebel organization. Their rational choice-based analytical model focuses on conditions that favor the formation of rebel organizations, and their econometric model predicts the probability of a civil war being initiated in a country during a five-year period. While the title 'Greed and Grievance in Civil War' alludes to either greed or grievance as being the main explanation for civil war, Collier & Hoeffler conclude

> Most proxies for grievances were insignificant. … Opportunity as an explanation of conflict risk is consistent with the economic interpretation of rebellion as greed-motivated. However, it is also consistent with grievance motivation as long as perceived grievances are sufficiently widespread to be common across societies and time. Opportunity can account for the existence of either for-profit, or not-for-profit, rebel organizations" (2001: 17)

While inequality, political rights, ethnic polarization and religious fractionalization were insignificant, natural resource dependence emerges as a very significant factor in CH's study. Economic development and access to finance, through the form of foreign contributions or control over natural resources, supports a combined greed/opportunity explanation for civil war.

This thesis' main objective is to critically assess Collier & Hoeffler's model of civil war. Their published article 'On the Incidence of Civil War in Africa' in the *Journal of Conflict Resolution* serves as the main reference and organizational framework for this thesis. This thesis assesses both their research design and theoretical approaches. With regards to the design, Collier & Hoeffler use five-year periods for each country as the unit of analysis. This is a rather unusual design in political science. I therefore develop the Collier & Hoeffler model into an annualized dataset. Regarding their theoretical approach, I focus on regime type and natural resources. Regime type is dropped from Collier & Hoeffler's model because it was not significant. I reexamine their finding by employing a different measurement of regime type.

A significant part of this thesis focuses on the relationship between natural resources and civil war. The two are linked theoretically through both scarcity and abundance. The link between resource *scarcity* and civil conflict is prominently advocated by Homer Dixon and the Toronto Research Group (Homer-Dixon, 1999;

Homer-Dixon & Blitt, 1998). This group of researchers argues that competition over scarce resources—caused either by a deteriorating environment, population pressure or systematic inequality—creates social conditions that might lead to conflict. The scarcity view on conflict is criticized by researchers who argue that social and political variables have more explanatory power than resource scarcity (Gleditsch, 1998; Hauge & Ellingsen, 1998).

A competing perspective emphasizes the link between *abundant* natural resources and civil war. Control over natural resources might serve as a motive in itself for conflict, or provide the income needed to finance rebel organizations (Addison, Billon & Murshed, 2001; Collier & Hoeffler, 1999, 2001, 2002; de Soysa, 2002; Hauge & Ellingsen, 1998; Le Billon, 2001). In addition to being a source of finance for rebel organizations, natural resources are equally crucial sources of revenue for governments, in times of conflict as well as peace. Contributions from economists and political scientists demonstrate that dependence on natural resource rents have consequences for long-term political and economic development (Auty, 2001; Beblawi & Luiciani, 1987; Karl, 1997; Noreng, 1997; Rodriguez & Sachs, 1999; Ross, 1999, 2001a; Sachs & Warner, 1995). Do natural resources—through their influence on political and economic development—create the potential for grievance-based conflicts? Do natural resources—due to their value as income and loot—serve as the very incentive for conflict? With these questions in mind, I therefore add a differentiated measurement of primary commodity dependence. Differing methods of extortion, ways of transport, degree of vulnerability and structure of markets for natural resources are factors that influence natural resources‘ usefulness for warring parties. Collier & Hoeffler investigated the difference between primary commodity products and found a significant, but not substantial, difference between oil and all other primary products (2002: 16). Collier & Hoeffler did not pursue the distinction further, but this study emphasizes the need to differentiate between various natural resources and pays particular attention to the importance of oil. The geographical qualities of oil make it attractive only to groups who are launching a coup d’état or secessionist wars. Its physical qualities make it a commodity less likely to be looted by rebels. In addition, oil dependency has an important impact on economic and political devel-

opment, and therefore presents a unique category of natural resources that needs more commentary and nuanced analysis than what Collier & Hoeffler's study provide.

Collier & Hoeffler pay special attention to Africa in their 2002 article. In order to investigate if their model is relevant to an analysis of conflict in another part of the world, I apply their model to the Middle East and North Africa.[3] This region is rich on both resources and conflicts and presents a challenge to the study of causal relationships behind civil conflict. The Middle East is the most oil-rich region in the world, both in terms of production and reserves, and has been the main source for literature on 'rentier states'. The region remains an authoritarian stronghold, and is treated as the odd-man out in the democratization literature. Diamond, Lipset & Linz's (1988-89: xx)[4] study of democratization in developing countries, excluded the Arab world in their analysis: 'the Islamic countries in the Middle East and North Africa generally lack much previous democratic experience, and appear to have little prospects of transition to even semi-democracy'. Since 1974 'the third wave' of democratization has swept over Southern Europe, Latin America, Asia, and more recently Eastern Europe, but has yet to reach the Middle East (Huntington, 1991). The region is the birthplace of Islam, and the large majority of the inhabitants are adherents of the Prophet Mohammad. Violent protest and actions in the name of Islam has been a very visible opposition for outside observers and media. In the academic realm, the thesis of civilizational clashes, in particular between the West and Islam, has gained prominence (Huntington, 1993). This thesis attempts to shed some light on the complex relationships between politics, economics, religion, natural resources and conflict, in the Middle East as well as globally.

In short, this thesis replicates and critically assesses Collier & Hoeffler's analysis of civil war in Africa (2002). Their model is applied on an annualized design, and on conflicts with a lower threshold for battle-related deaths. Different specifications of regime type and natural resource dependence are added. Their model is

[3] This thesis follows the World Bank's definition of the Middle East and North Africa. I use the Middle East, the Middle East and North Africa and MENA interexchangeably, referring to the following countries: Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Israel, Lebanon, Syria, Turkey, Iran, Iraq, Kuwait, Saudi Arabia, United Arab Emirates, Bahrain, Qatar, Oman and Yemen.

[4] The quote is taken from the introduction where the page numbers are Roman numbers.

also used to examine the causes of civil war in the Middle East and North Africa region.

The thesis proceeds as follows: Chapter 2 presents the theoretical framework for the Collier & Hoeffler model (hereafter CH). Causes of civil war are presented in two categories: grievance/motive and greed/opportunity, each with sub-categories covering economic, social, political and geographical/environmental aspects. A section on the Middle East and North Africa and the region's unique combination of some of the explanatory variables then follows. The third chapter outlines the research design, and describes the variables. The fourth chapter starts by replicating the CH analysis within their five-year period design, and later moves on to test their model on an annualized dataset, with civil war and armed civil conflicts (a lower battle-death threshold) as dependent variables. The CH design is then applied to an analysis of the Middle East region.

The main finding of this thesis is that both the grievance and opportunity explanations for civil war are strengthened. There is little evidence to make judgments about the personal motives (greed) of rebels. As opposed to CH's study, ethnic dominance emerges as statistically significant in all variants of the CH model, and strengthens the grievance explanation. The recurrent finding of an inverted U-curve relationship between regime type and conflict strengthens both the opportunity and grievance approaches. The opportunity to revolt is nearly non-existent in authoritarian regimes, while the causes for grievance is less in 'fairer' democratic regimes. Semi-democracies are sources for both opportunity and grievance, and are the most conflict-prone. Natural resources emerged as significant for conflict, but this does not necessarily tell us much about greed as the very motive for conflict. An equally plausible explanation is that only people who suffer and who have access to a source of finance are able to finance their rebellion. The headline grabbing 'greed and grievance' phrase needs to be replaced with the less catchy 'opportunities, grievances, motivations, and their interaction under the unfortunate collection of conditions cause civil war.'

Neither CH's study nor this one found a particular effect of Sub-Saharan Africa or the Middle East and North Africa regions. Both studies point to economic de-

velopment as being the core factor in limiting the risk of conflict. Although both authoritarian and democratic regimes are less prone to conflict than semi-democratic regimes, there is some evidence that democracies are less prone to domestic conflict. Since economic development and democracy are positively related, there is every reason to believe that a more democratic and more developed world in the end also will be more peaceful.

2. Review of the Literature on Causes of Civil War

Why do people, groups and states take up arms and fight? The underlying forces behind and triggers of armed conflict are many and complex, and can be analyzed on several levels (systemic, dyadic, national and sub-national) and from several theoretical perspectives (realism, liberalism and radicalism). Popularized presentations of civil war highlight ethnic, religious and ideological aspects of conflict, while underlying economic, social and political structures seldom make it to the headlines.

There is no single, agreed-upon model of civil war, but rather several competing and complementary explanations. Rupesinghe & Anderlini (1998) group civil conflicts into four types: resource-based conflicts (socio-economic factors); identity; governance/authority; and ideology. Both the articles by Gates (2002) and Sambanis (2002) summarize the 'status quo' of empirical research on the causes of civil war. Gates and Sambanis' discussions and classifications of the empirical relationships correspond well with Rupesinghe & Anderlini's theoretical typology. An overview of their assessments of the empirical causes of civil war is presented in Table 2.

Table 2. *Causes of Civil War: Agreed-upon and Debated Relationships*

	Economic	**Political**	**Geographical**	**Identity**	**Others**
Concensus	• Poverty • Lack of economic opportunities • Level of economic development	• Stability (G) • Change (G)		• Ethnic dominance	• Conflict history
Debated association/ possible causes	• Economic inequality	• Governance/ political institutions • State strength • Regime change (S)	• Natural resource dependence • Population distribution • Total population • Rough terrain	• Ethnic diasporas • Ethnic diversity	• Security dilemmas • Contagion/ diffusion • Systemic effects • Regional characteristics

Table based on Gates (2002) and Sambanis (2002). The two authors argue address and agree on most of the issues. While Gates classifies 'political stability and change' in consensus, Sambanis place 'regime change' among possible causes.

The starting point for this thesis is the article 'On the Incidence of Civil War in Africa' by Collier & Hoeffler (2002). The CH model serves as the basis of the analysis in Chapter 4, and their theoretical approach constitute the organizational framework for the theoretical discussion. Collier & Hoeffler model conflict as a function of either extreme levels of suffering (grievance), or extreme levels of opportunity (greed). Both perspectives contain economic, political, social, historic and geographical/environmental explanations. Following the discussion of the CH model, several other possible causes of civil war are discussed.

In their analysis, Collier & Hoeffler make a strong case that conflict in Africa to a large extent is caused by the region's poor economic performance. By assigning the economic characteristics of other developing countries in the 1990-95 period to the Sub-Saharan Africa region, the CH model predict that Sub-Saharan Africa would had experienced 4.7 rather than 8.6 percent conflict. Collier & Hoeffler conclude their article that Africa's poor economic performance is the most important explanatory factor explaining civil war in the region. This thesis uses the Collier & Hoeffler model to perform the same analysis on another conflict-ridden region, the Middle East and North Africa (MENA). There is reason to anticipate that the MENA region's conflict-correlates differ from the African ones. Some of the countries in the MENA region are fairly rich, and the region is culturally and ethnically more homogenous than sub-Saharan Africa. The last section of this chapter discusses aspects that make the Middle East and North Africa a particularly interesting region for an analysis of armed domestic conflict. The conflict-ridden region's home to abundant resources, authoritarian regimes and Islam are key factors in this respect.

2.1 Overview of the Collier & Hoeffler Method

The CH model has been developed in a series of papers and published articles (Collier, 2000a, b, c; Collier & Hoeffler, 1998, 1999, 2001, 2002). The most extensive model appears in the 2001 report 'Greed or Grievance in Civil Wars' where proxies of finance, grievance, military viability and conflict history are included to model the probability of rebellion. Insignificant variables were then dropped in a process of stepwise elimination. An overview of the initial variables is presented in

Table 3. Significant variables are colored in gray, and correspond with the ones included 'On the Incidence of Civil War in Africa' (Collier & Hoeffler, 2002).

Table 3. *Greed and Grievance in Civil War: Variables from Collier & Hoeffler, 2001*

MODELS	VARIABLES	PROXIES
Greed and Opportunity		
Financing of rebellion	Natural resource extortion	Primary commodity exports to GDP
	Diaspora donations	Size of emigrant population in US as proportion of population in country of origin
	Hostile government support	Cold War period (before 1990)
Atypically low cost	Foregone income	Mean income per capita Male secondary schooling* Growth-rate of economy
	Conflict specific capital	Time since most recent conflict
	Government military capability	Terrain: forest and mountains Geographic dispersion
	Social cohesion	Social fractionalization
Objective Grievances		
	Ethnic/religious hatred	Ethnic fractionalization Religious fractionalization Polarization
	Political repression	Politiy III
	Political exclusion	Ethnic dominance
	Economic inequality	Ratio of top-to-bottom quintiles of income (Gini)
Control variable	Scale effects (opportunities proportional to size)	Population size

Consistently significant variables (included in combined greed and grievance model)

* Correlated with mean income per capita, and could not be included in model

Collier & Hoeffler combine microeconomic and general socio-political theories on resource capture and civil conflict. Their model focuses on conditions that favor the formation of rebel organizations, and predicts the probability of a civil war being initiated in a country during a five-year period. Conflict is viewed as a function of microeconomic motives and socio-economic-political environment. Their model and line of arguing also gives a plausible explanation for why wars reappear. While conflict is bad for the majority of the population, some are 'doing well out of war', or at least doing better than before.

Collier & Hoeffler argue that—regardless of their legitimate reasons for grievance—groups only revolt if they have the financial infrastructure to do so. In brief, they present two explanations for civil war: atypical levels of grievance or atypical opportunities for forming a rebel organization. Access to finance, through the form of foreign contributions or control over natural resources, are important aspects of the opportunity model. Natural resources are linked to conflict with the 'lootable resources' argument: the existence of 'unmovable' resources (i.e. diamond mines) provides a fruitful base for rebel groups (Collier & Hoeffler, 2001, 2002; de Soysa, 2001, 2002; Ross, 2001a, b). Collier & Hoeffler conclude that the greed/opportunity perspective outperform grievance as an explanation for civil war. Access to natural resources emerges as a strong factor in their analysis, and supports their theoretical argument that natural resources greatly facilitates the formation and financing of rebellions.

A discussion of the theoretical aspects of the CH model is presented below. Collier & Hoeffler concede that the effect of the various variables can be interpreted in multiple ways. I base my presentation on the two underlying perspectives: grievance and greed, and some of the variables are discussed in both sections. Hypotheses are developed and presented after each theoretical sub-section. The emphasis of the theoretical chapter is natural resources, an understudied area in the field of civil war studies.

2.2 Grievance and Motive

2.2.1 Poverty

It is no surprise that poverty and civil war are related. Poverty-ridden countries host hungry, unemployed and dissatisfied populations. Almost any study of civil war finds that conflict is more frequent in poor and underdeveloped countries (Collier & Hoeffler, 1998, 2001; Hauge & Ellingsen, 1998; Hibbs, 1973).

High levels of economic development provide fewer reasons for grievance and frustration. When basic needs are covered, there is less dissatisfaction and frustration

with the incumbent regime. Hibbs (1973) argues that wealth reduces class conflict, which again favors negotiation and compromises—a corner stone in building a democratic regime. De Soysa (2002) emphasizes the re-distributive powers of a government with higher income. Large state revenues can be used to either satisfy or silence the population. At the same time higher income raise the opportunity cost for rebel groups. In contrast, in some poor countries, the salary and food provided by a rebel army is preferred over unemployment and little or no income. The first hypothesis thus states:

H1: Countries with low levels of GDP per capita are more likely to experience civil war than countries with high levels GDP per capita.

2.2.2 Lack of Economic Growth

Dismal prospects for an increase in income and little hope of a better future also create a base for grievance. The lack of prospects for a better economic future (economic growth) intensifies and adds to (real or perceived) sense of suffering and grievance. If the economic situation shows no sign of improvement or even worsens, the prospects for conflict should increase. Consequently:

H2: Countries with lower rates of economic growth are more likely to experience conflict that countries with higher growth

2.2.3 Economic Inequality

Inequality, or relative deprivation, is theorized to lead to conflict (Hibbs, 1973; Sen, 1973). In societies where some people are visibly much better off than others, disadvantaged groups might start to protest, radicalize, and even resort to violent conflict. In populations where income is unequally distributed, the incentives to join a rebel movement is high among the poorer segments of the population. However, the relationship between economic inequality and conflict is complicated. Lichbach (1989) provides an extensive discussion of the literature and studies on the relationship between economic inequality and political conflict, and concludes that 'economic inequality is neither necessary, sufficient, nor clearly probabilistically related to dissent' (Lichbach, 1989: 464). Hauge (2002: 387) concludes her PhD dissertation that '…

inequality alone is not a sufficient factor to cause armed conflict. The comparison between the two peace cases and the conflict cases has provided the study with a constant reminder about the need to identify the right combination of factors, or identity building contexts, within which socio-economic disparities bring about armed conflict.' When controlling for level of economic development, several studies find no relationship between conflict and inequality (Boswell & Dixon, 1990; Deininger & Squire, 1997). Data on economic inequality are also less reliable. Since Collier & Hoeffler find no effect of their economic inequality variable I do not include this aspect in my analysis.

2.2.4 Identity and Inter-group Hatred

Narratives and descriptions of civil wars are often based on ancient hatred and irreconcilable differences between different cultures—ethnic, religious or linguistic groups. Shared history, religion, customs, institutions and an awareness of being a unique community are the main elements that shape cultural identities. The literature on culture and conflict generally falls into three categories: primordialism, instrumentalism and constructivism (Lake & Rothchild, 1998).

Primordialists see culture as given and unchangeable. Cultural identity is emphasized as having a unique and overriding importance, and conflict along cultural divides is therefore natural (Kaplan, 1993). Variation in levels of conflict over time and place is not well explained by this view. If cultural identities are fixed, how does one explain the emergence of new identities? If cultural differences are conflictual, how does one account for the times cultures do not clash?

Instrumentalists see culture as a tool that elites use to obtain political or economic ends. 'Ethnic engineering' describes a situation where the masses as mobilized to conflict. In contrast to the primordial view, researchers in this tradition fail to take into consideration that culture is not something that can be created and manipulated out of the blue. Culture is rooted in a long history and tradition.

Emerging as a synthesis of the two aforementioned categories, constructivism is gaining more academic acceptance. Cultural differences are not viewed as inherently conflictual. Culture is viewed as dynamic and changeable, but also rooted and

controlled by society as a whole. Constructivists argue that conflict is 'caused by certain types of what might be called pathological social systems, which individuals do not control… it is the social system that breeds violent conflict, not individuals, and it is the socially constructed nature of ethnic than can cause conflict, once begun, to spin rapidly out of control' (Lake & Rothchild, 1998: 6). Identity relates to conflict in that it is needed for a group to provide a base from which to mobilize (Gurr & Harff, 1994; Tilly, 1978). In the cases where identity does not confine to the nation state border, a conflict may rise.

Smith (1991) asserts that we all have multiple identities depending on the context we are in. Thus the centrality of our ethnic identity in our lives can vary and does not always serve as a base for ethnic leaders to mobilize to conflict. Identity alone is not a sufficient cause for conflict. 'When a group with a common identity is discriminated against, it is likely to be aggressive and hostile' (Gurr & Harff, 1994: 83). Discrimination on a political and or an economic level leads to frustration, which again can lead to aggression. If scarce economic and political resources are distributed according to ethnic lines, this provides a fruitful base for revolt. Gurr (1993) and Väyrynen (1994) assert that most domestic conflicts originate from an ethnic base. Gurr reports in *Minorities at Risk* (1994) that discrimination and competition for scarce resources, was experienced economically by 147 and politically by 168 of the 233 ethnic groups he studied. Most groups organized to defend their right, and in more than 80 cases the conflict turned violent (1994, 6). Gurr demonstrated that discrimination and grievance often was conducted and based on ethnic, religious or linguistic grounds, which again serves as a base for identity and mobilization. However in a later work, Gurr (2000) points to a reduced role of ethnic conflict since the mid-1990s, caused by an apparent global strategy to contain ethnic conflict.

The bipolar and omnipotent Cold War to a great deal overshadowed and suppressed nationalism and ethnic conflict. With the lifting of the iron curtain, Mearsheimer (1990) predicted a bleak future for the newly democratized regimes, and likened the process to taking the lid of a pressure cooker. Rupesinghe (1992) points out that the democratic wave after the Cold War will result in new conflicts, as new democratic regimes open up and allows groups to express their dissent. The peak

in domestic conflict in 1992 (Figure 1) supports these fears, while the recent decline does not seem to fulfill these predictions. Ellingsen (2000) finds support for the fact that multi-ethnicity increases the propensity for conflict, especially for smaller scale domestic conflicts. The recent conflicts in the Former Yugoslavia and Rwanda are visible and violent testimonies to the devastating role that the sentiments and feelings connected to ethnicity and religious identity can play under the wrong circumstances. Popular perceptions, recent wars and much conflict theory assert that multi-ethnicity generates conflict.

H3: Socially fractionalized countries are more likely to experience civil war than homogenous countries

2.2.5 Political Exclusion: Ethnic Dominance

Societies where one ethnic group is dominant can create the basis for a political system where one or more ethnic minorities are discriminated against or even permanently excluded. As one of four measurements of ethnic heterogeneity, Ellingsen (2000) finds that countries where the dominant group constitutes less than 80 percent of the population have a higher propensity for conflict. When the minority is sufficiently large (above 20 percent), polarization and mobilization to conflict is more likely. Along the same lines, Collier & Hoeffler argue that in countries where an ethnic majority constitutes a small majority and identity follows ethnic lines, an ethnic majority (constituting 45 to 90 percent of the population) creates a conflict-generating situation where there is a permanent incentive to exploit the resources of large minority groups.

H4: Countries where one ethnic group constitute between 45 and 90 percent of the population are more likely to experience civil war than countries with a very large ethnic majority, or no ethnic majority at all

2.2.6 Grievance in Authoritarian Regimes

Political repression is an important source of grievance. The characteristics of political regimes determine the distribution of economic and political rights (Jaggers & Gurr, 1995). While a democratic regime ensures majority rule and minority rights and

is less likely to discriminate against minorities, autocratic regimes control and force people. The repressive tools used by authoritarian regimes often create discrimination and injustice—a fertile ground for violence. A hypothesis on the relationship between regime and conflict is developed after the discussion on democratic regimes.

2.3 Greed and Opportunity

2.3.1 Opportunities in Democratic Regimes

Frustration and grievances alone are insufficient to create rebellion. There also needs to be opportunity to revolt (Gurr, 1970). Tilly (1978) interprets the link between frustration and opportunity from a rational actor perspective, which sees rebellion as a calculation of costs and benefits. In *Mobilization to Revolution* (1978, 81) Tilly theorizes that a group will only rebel if the chances of success are good. Violence becomes a cost-benefit analysis, weighting grievance against opportunity.

Rummel argues that 'democracy is a general method of non-violence' (1995: 26.). A democratic regime is more likely to provide room for negotiation and compromise, and offers greater leeway for expression of frustration. Gurr & Lichbach find that democracies are ten times more likely to experience protest, but are unlikely to experience civil war and violence (1981: 69). An autocratic regime offers little opportunity to express discontent, and likewise civil violence is unlikely to take place even though the reasons for frustration are plenty. Ellingsen & Gleditsch (1997) and Mueller & Weede (1990) both show that democracies and rough authoritarian states are less prone to civil violence than semi-democracies. The distribution of domestic conflict is thus expected to take the shape of an inverted U—less conflict in both ends, but for opposite reasons.

The empirical evidence for the relationship between regime and rebellion is mixed. Several scholars find no support for the importance of regime type in civil wars (de Nardo, 1985; Francisco, 1995), yet other studies find an inverted U-shaped relationship (Gleditsch, 1992; Muller & Weede, 1990). The relationship between civil

wars and regime type is hypothesized to be curvilinear, with semi-democracies most conflict-prone.[5]

H5: Semi-democracies are more likely to experience civil war than either democracies and autocracies

2.3.2 Foregone Income: Income and Economic Growth

Low levels of income and little prospects for improvement creates a base for grievance, as well as facilitates recruitment to rebel organizations. In addition to the fact that poverty is a cause for rebellion due to suffering, the lack of income (GDP per capita) and little prospects for a better economic future (low economic growth or decline) provide strong incentives for joining a rebel organization that offers food and employment. Although the reasoning behind are different, economic development and growth impacts rebel recruitment is the same hypothesized way as in the grievance section (Hypotheses 1 and 2). Low levels of economic development and economic growth facilitate the opportunity to recruit to rebel organizations. Consequently, countries with low levels of economic development and economic growth should experience more conflict.

2.3.3 Social Fractionalization

In contrast to the hypothesis presented in the identity and hatred section, Collier & Hoeffler hypothesize fractionalization to *reduce* the propensity for conflict. Due to the lack of social cohesion in fractionalized societies, mobilization to conflict is made more difficult. Organizations with ethnic and religious diversity are theorized to function less effectively. Restricting the pool of possible members to only one ethnic or religious group reduces the chances for a rebel group to be effective. In contrast to the hypothesis on social (ethnic and religious) fractionalization, from an opportunity perspective, high levels of social fractionalization impedes mobilization.

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5 Semi-democracies includes both regimes in transition and institutionally hybrid regimes. Institutional inconsistent regimes do not have institutions that mutually reinforce each other, and are therefore likely to be unstable. A discussion on the institutional composition of regimes is outside the scope of this thesis. A thorough discussion (and a new dataset) is provided by (Gates et al., 2000).

H6: Countries with high levels of social fractionalization are less likely to experience civil war

2.3.4 Primary Commodity Abundance

A central variable in the Collier & Hoeffler's opportunity model is the access to finances. The major emphasis is put on access to natural resources/primary commodities. Collier & Hoeffler (2001) point to a direct link between natural resources and conflict, caused by greedy bandits (often masking themselves with a language of grievance), or rebel-leaders seizing the opportunity to finance their rebellion with profits from natural resources. In the post-Cold War climate rebels receive less foreign aid, and have to rely on their own sources for finance. Easily lootable natural resources, such as diamonds and drugs, provide lucrative sources of income for armed insurgencies. Addison et al. (2001) present a model of the cost of peaceful behavior, where the parties prefer a low-intensity conflict over peace, because it provides financial opportunities, including the control of natural resources, that are out-of-the-way in peacetime. A thorough discussion of the natural resources and conflict will be provided in Section 2.4. From an opportunity perspective, access to natural resources is hypothesized to facilitate the financing of rebellion. However, at high levels of primary commodity export (the proxy for natural resource abundance), the government is theorized to control and either repress or buy off its citizens. Consequently,

H7: Countries with medium levels of primary commodity dependence are more likely to experience civil war, than countries with low and high levels

2.3.5 Population: Geographic Dispersion and Size

The geographical dispersion of the population is by Collier & Hoeffler theorized to proxy government capability. A prime example of this is Zaire, a large country with its population distributed on the edges of the country. Herbst (2000) argues that Zaire is prone to rebellion because the government is unable to assert its control over the entire country. This applies to both military power and governmental services. In

countries where the population is evenly spread around, government services will be more expensive to provide. In contrast to what is predicted by neo-Malthusian theory, population density might be good for development in that administrating health and education is made easier when people live within smaller geographical areas.

H8: Countries where the population is evenly spread around the country are more likely to experience civil war than countries with concentrated populations

A variable on population size is included to control for the fact that countries with large populations are more likely to surpass the minimum casualty line than smaller populations. This would be more relevant for civil wars than armed civil conflicts. Also, larger countries could be more likely to experience conflict because they could be the home of more conflict generating factors.

H9: Countries with larger population are more likely to experience civil war than countries with smaller populations

2.3.6 Time Since Last Conflict

The time since the last conflict outbreak is of importance to the outbreak of a new conflict in several ways. Collier & Hoeffler places this variable in the opportunity model, proxying the access to conflict specific capital. The shorter the time since the last conflict, the better the access to trained soldiers and weapons.

Time since last conflict also relates to the grievance perspective in the way that 'time heals'. Extended periods with peace should make the population less ready for conflict. Hypothesis 10 captures both logics:

H10: The longer time since a civil war broke out, the less likely a country is to

experience civil war

2.4 Additions to the Collier & Hoeffler Model

This section discusses alternative specifications and interpretation of some of Collier & Hoeffler's variables.

2.4.1 Natural Resource Scarcity

In contrast to the natural resource abundance argument, many researchers argue that natural resource scarcity causes conflict. Systematic inequality, population pressure and deteriorating environmental conditions are theorized to pressure people to compete for increasingly scarce resources. In some situations, resources become so scarce and competition so fierce that armed conflict breaks out. The link between resource *scarcity* and civil conflict is analyzed in many academic circles (Homer-Dixon, 1999; Homer-Dixon & Blitt, 1998; Kaplan, 1994; Renner, 1996). Klare (2000, 2001a, b) argues that control over natural resources is of increasing importance to governments. Competition over resources is intensifying and could easily turn into open conflict, in particular for the crucial commodities of petroleum and water

The resource scarcity paradigm has prominently been advocated by Homer-Dixon and the Toronto Research Group. Their research is based on several case studies that explore the link between scarcity and violence. Homer-Dixon identifies three types of scarcities: supply-induced (deterioration, pollution), demand-induced (population growth) or structural (inequality)—all of which are theorized to lead to a higher propensity for conflict (Homer-Dixon, 1999). Resource scarcity is seen as the primary force behind civil conflict, and theorized to work in two main ways: resource capture and through an ingenuity gap.

The recent violence in Haiti, Mexico (Chiapas), Rwanda, South Africa and the Philippines are thought to be products a process where resource scarcity triggers elites to gain control over resource, at the cost of less powerful groups. 'Resource capture occurs when the degradation and depletion of renewable resources interact with population growth to encourage powerful groups within a society to shift resource distribution in their favor' (1999: 177).

Homer-Dixon also links scarcity directly to conflict through the lack of ingenuity (2000). In poor countries, the lack of innovation hinders the development of technological progress and economic growth from within. Thus, poor and resource-scarce countries are trapped in a vicious cycles of 'no resources—no innovation—no economic development—no solution to environmental scarcity—no economic growth…' Homer-Dixon's theory has gained prominence, and is supported by a large literature on neo-Malthusian fears of a population explosion (Ehrlich, 1968; Ehrlich & Ehrlich, 1972) and the 'coming anarchy' (Kaplan, 1994), these researchers predict a bleak future ridden with conflicts caused by resource scarcity.

Several researchers have challenged and criticized the scarcity approach. First and foremost, Homer-Dixon is accused of a flawed research design by selecting cases on the dependent variable (conflict). Homer-Dixon's cases have both resource scarcity AND conflict. Consequently, the studies do not contain a relevant reference group, and the conclusions they draw are less certain. Furthermore, the model contains many independent and interacting variables, making it almost impossible to test empirically. In addition, variables that often are included in studies of conflict, such as regime type and economic development, are not included in the model. Finally, Gleditsch (1998) argues that Homer-Dixon fails to account for the potential of economizing and technical inventions, as well as for the fact that many scarcities are local, and not global.

Overall, empirical testing of the scarcity approach finds little support. Hauge & Ellingsen (1998) find that democracy, economic growth, and development provide a stronger explanation for conflict than resource scarcity. De Soysa (2000) points out that Hauge & Ellingsen's study is not testing scarcity, but depletion. The deforestation rate in Brazil is much higher that in Saudi Arabia, but that does not tell us much about scarcity. Brazil host vast areas of rainforest, and the high rate of depletion is only a sign of the government exploiting an abundant resource (albeit at an unhealthy rate). Saudi Arabia is basically a desert. By using per capita availability and making a distinction between renewable and non-renewable resources, de Soysa find that resource abundant countries, not resource poor countries, are more likely to experience

conflict. This thesis focuses on natural resource abundance, and does not test the scarcity approach.

2.4.2 The Differing Nature of Natural Resources

Collier & Hoeffler argue that the windfall profit potential that controlling a resource-rich area generates becomes the main motive for an armed rebellion. Primary commodities are very different in terms of size, transportation needs, extract cost, market structure etc., and some resources are of more use to rebels than others. Collier & Hoeffler's wide category thus needs disaggregating. Le Billon (2001: 573) presents a useful typology of natural resource, based on the distinction between the geographical location ('proximate' or 'distant' to the capital) and the geographical concentration ('point' or 'diffuse') of the various resources. An overview of conflict types and natural resources in the country is presented in Table 4.

Table 4. *The Nature and Geography of Resources and Types of Conflict*

	Point	Diffuse
Proximate	*State control/ coup*	*Rebellion/ rioting*
	Algeria (gas) Angola (oil) Chad (oil) Congo-Brazzaville (oil) Iran-Iraq (oil) Liberia (iron ore, rubber) Nicaragua (coffee) Rwanda (coffee) Sierra Leone (rutile)	El Slavador (coffee) Guatemala (cropland) Israel-Palestine (freshwater) Mexico (cropland) Senegal-Mauritania (cropland)
Distant	*Secession*	*Warlordism*
	Angola/Cabinda (oil) Caucasus (oil) DR Congo (coper, cobault, gold) Indonesia (oil) Papua New Guinea/ Bougainville (copper) Senegal/ Casamance (marijuana) Sudan (oil)	Afghanistan (opium) Angola (diamonds) Burma (opium, timber) Caucasus (drugs) Cambodia (gems, timber) Columbia (cocaine) DR Congo (diamonds, gold) Kurdistan (heroin) Lebanon (hash) Liberia (timber, diamonds, drugs) Peru (cocaine) Phillipines (marijuana, timber) Sierra Leone (diamonds) Somalia (bananas, camels) Tadjikistan (drugs) F.R. Yugoslavia (marijuana, timber)

* Table is based on Le Billon (2001: 573)

Resources that are far from government centers and concentrated in one area are vulnerable to rebel attacks (2001: 570). According to Le Billon's typology, resource-rich regions offer potential for secessionist civil wars. The majority of resources in both the proximate and distant point category are oil and gas. This indicates that oil inhibits a very unique set of conflict dynamics. Le Billon argues that 'resource rents constitute 'the price' for controlling the state and can lead to violent bids for the government… Alternatively, bids for state control can be motivated by the greed of competing elites' (2001: 573). Along the same lines as Le Billon, Auty argues for the importance of the different natural commodities' value-to-weight ratio. Auty distinguishes between bulk commodities (copper, oil, sugar) and conflict commodities (diamonds and drugs).

> High-rent commodities like oil sustain such corrosion for longer than low-rent commodities and foster political underdevelopment that elicits military challenges. In addition, natural resource commodities with high value in relation to weight (like drugs

> and diamonds) located in remote regions supports secessionist regimes and/or warlords (2002: 12)

Furthermore, other dimensions of natural resources also influence the 'lootability' and role in conflict. The *technology and infrastructure* required for the extraction of the varying resource plays an important role. The mining of gold ores, copper, bauxite and kimberlitic diamonds require fairly advanced machinery and technology. This is also the case for oil and gas extraction, with some areas being less hospitable and more expensive to extract than others.[6]

However, once extracted, the *physical quality* of the primary commodities differs immensely. The dense format of gold, drugs and diamonds make them easy to smuggle, either by humans, animals or normal vehicles of transportation. On the other hand, the transport of oil requires trucks, tankers or pipelines, and requires an extensive infrastructure. The size, format and the rather fixed transportation routes of oil and timber also make them less-preferred commodities for rebel organizations. However, one way rebels might profit from controlling territories with oil wells and timber forests is to make them subject to 'taxation,' agreeing to let companies continue their business against the payment of a mafia-style protection fee. Auty (2002) argues that proximity to porous borders enhance the usefulness of i.e. timber as a source of income. This is the case along the Cambodian border, and in some remote Indonesian regions.

The *nature of the market* of the various commodities also varies. Narcotics are illegal commodities, and the whole market remains outside government or international control. Statistically, it is difficult to assess the contribution of drugs to the economy of war, since the commodity itself is illegal and official statistics is rare or missing. Until recently, few cared about the origins of diamonds, and all diamonds entered a rather shady, but international and legal market. Due to much focus on 'conflict diamonds', international NGOs and parts of the industry itself (including *De Beers,* the world's largest diamond trading company) have worked towards an international certification arrangement that traces the origin of diamonds.

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[6] Drilling oil wells deeps in North Sea is much more technologically demanding and expensive ($10/barrel) that in the sand dunes of the Arabian deserts ($2/barrel).

Most oil companies are willing to take huge risks to gain access to new and promising oil and gas fields—including operations in conflict zones. Nevertheless, oil is sold in an internationally regulated market, and there are fewer opportunities for illegal oil to access the market if international sanctions are in place. Due to the unique composition of each oil field (weight, sulfur-level and density) its origin can easily be traced. The Iraqi sanction regime provides a good example of the restriction of the international oil market. While Iraq is known to smuggle oil to Syria and Jordan, attempts to smuggle oil into the international market have to a great extent been discouraged and discovered.

Finally, drugs play a more complex role in the natural resources and conflict nexus than most other commodities. Plants used in the production of drugs can be cultivated in most warm areas in this world. However, actual cultivation of these plants is dependent on the political and economic situation in these areas. The cultivation of drugs is likely to be endogenous with conflict, as well as the major economic and political explanatory variables. In a conflict climate where the government has little legitimacy and/or control, the production of drugs cannot be controlled or stopped by the government. In a difficult economic situation, farmers are more likely to choose to plant hashish than wheat.

2.4.3 Natural Resource Dependence and Economic Growth

> Men of a fat and fertile soil are most commonly effeminate and cowards; whereas contrariwise a barren country makes men temperate by necessity, and by consequence careful, vigilant, and industrious (Bodin, 1576. Quoted in de Soysa, 2000: 1)

The early wisdom of Jean Bodin neatly summarizes a lesson most resource rich regimes seem not to have learned. Natural resource abundance is associated with poor economic growth and greater social and economic inequality (Sachs & Warner, 1995). The title of Sachs & Warner's article (2001) speaks for itself: 'The Curse of Natural Resources'. Paradoxically, since the 1960s, most resource rich countries have performed poorer then resource poor countries. Per capita growth in resource poor countries has on the average been two to three times faster than in resource rich countries and resource poor countries are often associated with more equal societies (Auty, 2000; Sachs & Warner, 1995, 2001).

The reason why resource-rich countries display lower growth rates than resource poor countries is attributed to several factors. First, 'Dutch disease' is often used to explain the economic challenges resource rich states face. 'Dutch disease' originates from the Dutch experience in the 1960s, when an the discovery of gas in the North Sea increased export revenues and led to the overvaluation of the currency. Simultaneously, the petroleum sector drained capital and labor away from the manufacture and agriculture sectors, and consequently raised their production costs. This led to a decline in the export of goods from these sectors, and increased the cost of goods and services that could not be imported (the non-tradable sector). However, Ross points out that Dutch Disease might not be as common in developing countries, because the labor market is not saturated. Increased investment in the petroleum sector does not drain labor from other sector, but rather decreases unemployment and encourages foreign investment (1999: 305-307).

Secondly, states that experience a sudden influx of income they did not work hard to get to, do not need neither the fiscal nor financial discipline normally required. If it is too good to be true, it probably is… Rodriguez & Sachs (1999) argue that resource-rich states tend to be living beyond their means. 'Resource-abundant economies grow more slowly precisely *because* they have an unsustainable high level of income' (1999: 278). Murshed (2002: 2) highlights the possibility of growth collapse following resource booms.

Thirdly, in resource-rich countries, much of the economic activity is focused on gaining access to the lucrative resource cycle. Productivity is declining because resources are diverted to rent seeking. Little initiative and energy is placed on innovation. This starkly contradicts Homer-Dixon's 'ingenuity gap' argument. Sachs & Warner (1999) argue that resource-rich countries do not experience endogenous growth because they live comfortably off resource rents, and do not need to innovate to ensure a steady flow of income (at least in the short term perspective). On the other hand, resource-poor countries are forced to develop more competitive and diverse production and economies, and are less prone to fluctuations and price of one product.

Auty (2001) contrasts two development trajectories: while resource poor countries follow a competitive industrialization, resource rich countries are caught in a staple trap. In poor countries, politician and their people share interest that can only be achieved with prudent policies. Auty argue that governments in resource rich countries

> … will find it easier to satisfy its financial need by capturing the rents than by investing to generate wealth so that the latter will be neglected in favour of the former. Effort will be diverted into the political process by which rents are extracted and away from measure to raise productivity, like improving institutions. Indeed, effective institutions may be regarded as an impediment to rent-seeking behaviour because they increase government accountability and promote competition, both of which shrink rent-seeking opportunities (2001: 4)

Auty also argues that the potential for economic distortion, and therefore a growth collapse, is greater with 'point' natural resources than with resources with diffuse socio-economic linkages like peasant crops

2.4.4 Natural Resource Dependence and Political Development

In addition to the economic consequences of windfall profits from natural resources, the development of political institutions is also severely impeded. The core of the rentier-state dynamic is found here. Economic and political activity becomes dominated by rent-seeking behavior. The centralized income, controlled by the government, creates a system of patronage and clientilism. Rentier states develop democracy more slowly (if at all), and that dependence on one lucrative primary commodity hampers the development of a healthy economy (Beblawi & Luiciani, 1987; de Soysa, 2002; Karl, 1997; Noreng, 1997; Ross, 1999, 2001a). Leite & Weidemann (1999) find that 'natural resource abundance creates opportunity for rent-seeking behaviors and is an important factor in determining a country's level of corruption'.

Moore (2000) emphasizes the distinction between earned or unearned income as powerful explanations for the political underdevelopment. The main focus of political underdevelopment is the weak dependence of state elites on their citizens. This is in great deal attributed to the ways in which these states have been created, and the way they earn their income. Moore envisage three overlapping circumstances allowing for these high levels of dependence: strong external financial and/or military sup-

port; dependence on 'unearned income,' such as mineral revenues or foreign aid; and abundant resources are used to buy military equipment and personnel to be used against their own citizens (Moore, 2000: 4).

Brynen et al. argues that a '…narrow base of the economy (centered on the petroleum and public sectors) deprives most societal actors any degree of economic leverage vis-à-vis the state. Society is atomized into individual rent- and reward seekers, and the development of the autonomous institutions of civil society is severely stunted' (1995: 15). Hadenius finds a significant negative correlation (-0.42) between commodity concentration and democracy. The commodity concentration variable explains 17.7% of the variance in level of democracy (1992: 94-95).

Ross (2001a) tests the 'does oil hinder democracy?' proposition and find overwhelming evidence that oil and democracy do not mix. This finding is not just restricted to the Middle East. Ross also finds some support for the three explanations of this finding: the rentier effect (taxation and spending, group formation effect), repression effect (resource wealth allows governments to spend more on internal security and military) and the lack of modernization discussed above. Democracy presupposes occupational specialization, urbanization and higher levels of education (Diamond, Linz & Lipset, 1995; Diamond, Lipset & Linz, 1988-89; Inglehart, 1997; Putnam, Leonardi & Nanetti, 1993). Without these elements being the by-products of economic development, democracy will not evolve. Thus it is not wealth per se, but the economic and social diversification generated by modernization that changes society, and the skills and composition of it work force, citizens and society.

Based on the discussion presented in the three previous sections, I argue that middle levels of primary resource dependence should yield a higher propensity for conflict. Countries where there are no or little resources from which rent can be captured, will experience less conflict. Countries where resources are abundant are also not likely to experience conflict, because the government is theorized to capture that rent. The populations in resource rich countries are then either bought off or held down by abundant government spending on social welfare or military expenditures. Countries with medium levels of resource revenues are likely to experience conflict. I include three variables to test this link. All are measured as percentage of total ex-

ports. It is the possibility to obtain rent that is crucial in this argument. Only if the commodities can be sold on are they of value to the warring parties. The widest variable includes all primary commodity exports. Two sub-sets of primary commodities, oil and minerals, are also tested. Unfortunately, data on crucial conflict commodities such as drugs and diamonds could not be obtained. The direct link between natural resource dependence and conflict is found in the opportunity for rent capture. The hypothesis on primary commodity dependence was presented in section 2.3.4. Oil and mineral dependence is hypothesized to display the same relationship.

H11: Oil dependence displays an inverted U-shaped relationship with civil war

H12: Mineral dependency displays an inverted U-shaped relationship with civil war

2.4.5 Regime Transition and Stability

Political change and instability, whether towards democratization or autocratization, creates potential for civil violence (Sahin & Linz, 1995; Tarrow, 1994). In a classical passage, de Toqueville argues that 'revolutions do not always come when things are going from bad to worse… Usually the most dangerous time for a bad government is when it attempts to reform itself' (Tocqueville, [1856] 1955: 182). Transition brings about hope for better times, but might not be delivered. Then, violence is likely to occur (Gurr, 1970: 596).

Huntington (1991) asserts that political violence is connected with democratization. In regime transition processes, major change is going on, and the ones who benefited from the previous system are likely to oppose change. The implementation of market economy changes the property relations and such changes are unlikely to take place without serious conflict. Horowitz (1985) argues that changes are especially violent in areas where several ethnic groups share the same territory. Especially, if autocratic regimes fail in the process of reforming themselves, ethnic entrepreneurs might take advantage of the reigning sense of chaos and uncertainty.

The fact that democracies and autocracies are equally peaceful, and that democratization increases the risk of conflict, has been used to argue against democrati-

zation (Mansfield & Snyder, 1995). The democratic peace argument originates from empirical research on interstate war: two democracies have never fought a war against each other (Babst, 1964; Doyle, 1983a, b, 1986; Russett, 1993a, b; Russett & Oneal, 2001). From the findings on a dyadic level, the democratic peace argument has sparked hope that increased democratization will lead to a more peaceful world (the systemic level). What implications does the democratic peace argument have for the substate level? Is the issue of democratization also relevant to internal conflicts? The type of regime is theorized to affect two important aspects of civil violence: frustration/grievance and opportunity. A recent study finds some support for the fact that democracies are more stable than autocracies (Hegre et al., 2001). Even though democracies and authoritarian states are equally peaceful, democracy seems to be a better recipe for long-term stability, human welfare and peace, on an international as well as domestic scale. Hegre et al. conclude that "… durable democracy is the most probable end-point of the democratization process. The democratic civil peace is not only more just than the autocratic peace but also more stable" (2001: 44). Is there reason to believe that the inverted U might tilt towards democracy's side? I do not investigate the direction of change (toward autocratization or democratization) in this thesis, but includes a measurement where change is defined as a doubling or halving of the regime score. Gates asserts that the finding that stability promotes peace and that change—both democratization and autocratization—generates conflict, belongs in the 'certain relationship' category. I therefore hypothesize that:

H13: Countries in transition are more prone to civil war

2.5 The Middle East and North Africa

Collier & Hoeffler investigate sub-Saharan Africa in their analysis. I would like to examine the Middle East and North Africa region. The main reason the Middle East and North Africa region merits a close examination of its correlates of civil war, is because of its conflict history and overrepresentation of variables that directly and indirectly are thought to generate conflict. The region is the home to abundant natural resources, authoritarian regimes and Islam. The region has failed to join the global trend of democratization, and Islamism is a vibrant counter-ideology to democracy.

Combined with recurrent conflicts and the entrenched Israeli-Palestinian conflict, in addition to the world's highest military spending (per capita) the Middle East is often regarded as a hopeless case where both democracy and peace are doomed to failure. This section discusses some important features that sets the Middle East and North Africa region out from other developing regions, namely the political and economic consequences of natural resource abundance, the region's resistance towards democracy, and the sensitive and complex relationship between culture and conflict.

2.5.1 Rentier States

A rentier economy is defined by Beblawi & Luciani as an '… economy substantially supported by expenditure from the state, while the state is supported from rent accruing from abroad' (1987: 11). Marshall (1920: 350) defines rent as 'income derived from the gift of nature'. These definitions incorporate, but are not restricted to natural resources. Substantial foreign aid and foreign workers' remittances would also be included in Beblawi & Luciani's definition. In the Middle East, Israel and Egypt are receivers of ample amounts of foreign aid, in particular from the US. Workers' remittances play an important role in the Jordanian, Palestinian, Egyptian, Syrian and North African economies.

Many of the countries in the Middle East and North Africa region are homes to generous reserves of oil and obviously fit into the 'rentier states' definition. The dependency, directly or indirectly, on oil has been a formative feature of modern Middle East politics, economies and societies. The Gulf States are prime examples[7], while also Iran, Iraq and Algeria are significant oil producers. Dependence on one commodity and its revenue—rent—affects the producing country in many ways. The consequences of oil dependence for political and economic development are discussed below.

Political Consequences: Authoritarianism

Oil seems to produce a patterned response in most countries in which it constitutes the major share of state revenue. This peculiar kind of economy affects the develop-

[7] Yemen and to a certain extent Bahrain and Oman are exceptions.

ment of the state and its political and social structures. This phenomenon is not restricted to the Middle East, but for geological reason, this region has a high concentration of such states. In the Middle East, the abundance of oil has made already patriarchic and hierarchic societies even more authoritarian, by leaving control of the enormous revenues in the hands of a few. Competing and dissident voices have easily been bought off. Citizens have been provided with extensive social services, and pay little or no taxes in return. With the basic needs met by a generous welfare state, and with little more than demands for quietness and loyalty in return, the populations are politically inactive, obedient and loyal to its rulers. Crystal (1990) analyzes the formation and changes of the political, social and economic structures in Kuwait and Qatar, and demonstrates how oil has eliminated the merchant class, and has left the rulers with no political opponents:

> The rulers exacted a price for their economic largesse—political quiescence. In both states the transition to oil was accomplished through a tacit arrangement between the ruler and the trading families, a trade of formal power for wealth. In exchange for receiving a sizable portion of oil revenues, the merchants renounced their historical claim to participate in decision-making (1990: 9)

Politically, the entire MENA region remains an authoritarian stronghold. No wave of democratization is in sight, in great part due to the foreign and domestic arrangements created by continued and vulnerable reliance on petroleum. After the fall of communism, the Middle East remains the only region where a vibrant counter-ideology to democracy has emerged. Islamic movements are first and foremost a response to opposition towards the incumbent authoritarian regimes in the entire region. The topic of Islamic fundamentalism provides enough material for numerous books and dissertations, and is not the topic for this thesis. It suffices to say that Islamic movements and Islamic fundamentalism are based on a common cultural heritage, but moreover are products of illegitimate regimes and the lack of channels for legitimate political opposition. In these authoritarian regimes, the mosques have often been the only area outside the control of the government. Restrictions on free speech have hindered the development of a free press, and have to a large extent channeled political opposition and frustration to the pulpits and Friday prayers. The lack of open information channels has also created a fertile ground for conspiracy theories.

Democratic regimes in the West fear Islamic fundamentalism. Consequently and paradoxically, foreign intervention and support from liberal democracies have been provided en masse to authoritarian regimes guilty of serious and systematic breaches of human rights. The close relationship between the US and Saudi Arabia and the international inaction in the case of the Algerian elections in 1995 are prime examples of this. The peoples of the Middle East have seen the democratic West protecting autocratic regimes, with little legitimacy in their own people, in the name of protecting democracy.

Economic Consequence: Slow Growth and Little Diversity

The economic consequences of natural resource dependence were discussed in section 2.4.3. In the Middle East, oil has dominated and shaped economic development, both for producers and the entire region. Paradoxically, the region is today the host of some of the most developed and least developed countries in the world. Oil has created enormous wealth for the large producing countries and has offered their citizens high standards of living. The oil dependent economies have, however, failed to diversify and levels of industrialization is low. For more than three decades, plentiful oil has been pumped out of the ground, allowing the elites to remain in control. However, fluctuations in oil prices combined with high military spending, growing populations and unemployment is posing serious social and economic challenges to the incumbent regimes. In the Arab Gulf, all of the oil monarchies are faced with the problem of a growing population, overstaffed bureaucracies, unemployment, lack of economic diversity and unclear lines of succession.

In addition to the oil-rich Gulf countries, the Middle East hosts fairly industrialized economies such as Algeria, Egypt, Jordan, Morocco, Syria and Tunisia, and the low-income country of Yemen. These economies have been severely affected by the influx of petro dollars and fluctuations in oil prices. The economic policies of the region's governments have been exceptionally state-focused and oriented toward the domestic market. Privatization has been extremely slow, taking place within a political framework of corruption and nepotism.

Based on the strategic importance of oil, the Middle East has developed unusual ties to the world market. Two types of rentier-states, those dependent on oil and those that received substantial foreign aid (Israel and Egypt), are important features of this formation. Anderson strongly criticizes this economic structure, and its influence on political organization.

> Not only has this disproportionate reliance on external, politically driven income enhanced the sensitivity of these regimes to the concerns of international patrons and diminished their accountability to domestic populations about which they know little, it has also led to a political economy based on non-economic bottom line, or what is known as soft budget constraints … The availability of soft budget constraint bailouts for compliant regimes has left the region with economies and social structures that are profoundly distorted by conventional capitalist market standards, and profoundly inauspicious for democracy (2001: 55-56)

Economic wealth also opens up for the possibility for high levels of military spending. High military expenditures are seldom conducive to productive economies as both people and money are bound up in activities whose sole purpose is to maintain order and stability. Hadenius' data show that the correlation between democracy and high military expenditure is negative and significant (-0.43) and accounts for 18.2% of the variance in democracy. Hadenius concludes that 'large armed forces … have an adverse effect on democracy' (1992: 141). Evidently, military expenditure is also endogenous with conflict. A country at war needs to use its weapons, and buy new ones.

The Middle East and North Africa is a highly militarized region, both in terms of weapons import, per capita spending and share of GDP (Bureau of Verification and Compliance, 2000; Sköns et al., 2002). Rulers in the Middle East have developed unique ties with countries with military production, in particular the United States, Great Britain and France. In addition to the linkages to the international actors, Noreng interprets the high military spending in the Middle East in the following way:

> The persistent priority given to military expenditure and internal security over civilian tasks can be seen as an indicator of the rulers' fears of each other and of their own population, of the need to back their power with military means, and, not last, the effect of foreign manipulation (1997: 2)

The amount of money spent on maintaining external and internal security is a powerful indicator of the stability and peacefulness of the country. 'The situation is particularly distressing from the viewpoint of democracy when the military arm of the

state, the armed forces, is politically dominant' (Hadenius, 1992: 138). An army's access to effective means of coercion (trained soldiers and arms), its ability to administrate through its centralized, hierarchic and disciplined system and its strong socialization-function gives it the opportunity to develop itself—over time—into a state in the state. Gause (1995: 285-6) argues that heavy emphasis on war preparation concentrates power, makes it easier to stigmatize and oppress opposition forces and gives the state greater control over the economy and allows for the building of large coercive institutions.

2.5.2 Modernization and Democratization

The causes of the lack of democracy are closely connected with economic development. The Middle East and North Africa region has been excluded in most studies of democratization, and seems to be the region the most resistant to what appears to be a global trend. Democracy and economic development are not unrelated. What are the conditions for democracy? Is economic development possible without democracy? Is either's relationship with civil war an artifact of the other? Economic development is crucial to domestic stability and peace, as well as its impact on democracy (Burkhart & Lewis-Beck, 1994; Dahl, 1971; Lipset, Seong & Torres, 1993).[8] Modernization theorists argue that occupational specialization and education is a precondition for democracy. Wealth favors the growth of literacy, urbanization, and mass media, and this process of modernization is a precondition for stable democracies (Inglehart, 1997; Putnam, Leonardi & Nanetti, 1993). This description does not fit the Middle East's rentier states. Little effort was put into diversifying their economies since the major source was the easily accessible the oil beneath the rulers' feet. Wealth came easy and with little effort. The social and economic conditions prevailing in the Middle East is not a recipe for modernization and democratization. The prerequisites for a market economy are not fulfilled, and economies largely lie either in total control or totally outside government control (Anderson, 2001). The rentier concept is a power-

8 However, O'Donnell (1986) argues that some regimes in transition, i.e. Argentina, Taiwan, Korea and Singapore, remained authoritarian in order to avoid rebellion while creating economic development. Contrary to O'Donnell's claim, Feng (1997) argues that democracy leads to economic growth through it emphasis on individual initiative.

ful analytical tool for explaining the peculiar economic and political structures in the region. But is oil-dependency really the only variable explaining Middle East exceptionalism, in terms of economic development, authoritarian dominance and prevalence of conflict. What is the role of culture in this picture?

2.5.3 Clash of Civilizations?: Culture, Society and Islam

The resistance or failure to develop democracy is the main important feature of Middle Eastern exceptionalism. Another factor that makes the Middle East a unique region is its near dominance of Islam. Islam has been and continues to be a major force in shaping the societies of the countries in the Middle East and North Africa. Islam is an intrinsic part of society and culture, as well as the political and judicial systems. Some scholars argue for both the inherent authoritarian nature of both Islamic and Arabic culture, and claim that Islam is inherently incompatible with democracy: '…the idea of democracy is quite alien to the mind-set of Islam' (Kedourie, 1994: 1). Huntington argues that 'cultures that are consumatory in character—that is, where intermediate and ultimate ends are closely connected—seem to be less favorable to democracy' (1984: 208). Others argue that important elements of Islamic doctrine and tradition (such as the doctrine of 'din wa dawla'—no separation between state and religion; the insistence on divine law and superiority; the suppression of women and other minorities; emphasis on order and obedience) are incompatible with democracy (Mozaffari, 1987; Pipes, 1983). In a well-know argument Huntington theorizes that in the post-Cold War world, the differences between civilizations will shape cooperation and conflict, internationally as well as domestically (Huntington, 1993, 1996). This controversial 'clash of civilizations' is hypothesized to have the bloodiest borders where Islam and the West meet. However, within Islam the divide between the Shia and Sunni strands is of significant importance, and is even described as a clash *within* civilizations (Trautner, 1999).

The 1960s saw a renaissance of Weber and the old 'national character' school with Almond & Verba's *The Civic Culture* (1963) which argues that particular values and attitudes could be attributed to peoples in a society, and that certain attitudes and habits are crucial in developing democracy. The study received a lot of criticism

based on its methodology, and the political culture paradigm faded during the 1970s and 1980s. Today, Hudson makes a case for carefully bringing political culture back into political science. 'Political culture—especially as a single factor—is not likely to 'explain' dependent variables as general as stability, democracy, or authoritarianism. But it might help explain why certain institutions (such as legislatures) function as they do' (Hudson, 1995: 64).

Brynen et al. summarize the middle-ground arguments in the political culture debate on democracy in the Arab world: 'Political culture has considerable utility as an explanatory variable, but only if it is dealt with in nuanced way…both authoritarian *and* participatory strands exist within the political culture of the region, with the latter expressed in Islamic principles of *shura*' (emphasis in original, (1995: 7). Anderson dismisses the political culture argument all together: '… the nature of political regimes in the Arab world, like those elsewhere in the world, can best be understood as reflections of the political economy of the countries in question, particularly the character of their integration into the world economy' (1995: 78).

Religion has for long provided an effective source for justification of and mobilization into conflict. Historically, many religions have emphasized the duty of their followers to convert or kill infidels. The crusades and the European religious war, and to some extent the 'white man's burden' of colonialism, serve as prime examples. Today, Muslim fundamentalism and Jihad (holy war) is an often-cited example of religious aggressiveness. The relationship between religion and conflict is controversial. Are some religions more aggressive and conflict-prone than others? While Huntington's quote might allude to that, there is little theoretical or empirical evidence that points to a causal relationship between certain religions and civil conflict. Midlarsky (1998) concludes that civilizational conflict is not likely in the future. The analysis by de Soysa (2002) refutes the theorized animosity between Islam and Christianity, and proposes a more structurally oriented explanation:

> Some of the bloodiest conflicts in Africa are raging in largely Catholic countries, such as Burundi, Rwanda, and Angola. These results taken together may be suggesting that conflict is likelier in societies where church and state are driving competing authorities and possibly emasculating political institutions that mediate between state and society. Moreover, institutional factors that give the Catholic church and the Mosque an organizational advantage for mobilizing people possibly allows greater

> degrees of conflict through communal polarization than because of hatred of any defined 'other' (2002: 411)

The literature on the relationship between democracy and religion is more theoretically elaborated and empirically tested (Hadenius, 1992; Huntington, 1993; Weber, 1904). The German sociologist Max Weber emphasized societal and structural consequences of religion. In *The Protestant Ethic,* Weber theorizes that both capitalism and democracy are unintended by-products of an ethic particular to Protestantism. Firstly, Protestant beliefs, ideals and actions were conducive to economic development and capitalism due to its emphasis on hard work and pietism. According to Protestant doctrine, the fruits of success were not supposed to be used on luxury products and indulgence, but rather be reinvested. Secondly, the Protestant faith emphasizes individual responsibility for salvation. Also, skepticism towards authority and a history of rebellion are elements conducive to democracy.

Writing in a period of skepticism towards the applicability of democracy outside its area of origin, Kennan argued that democracy '…evolved in the eighteenth and nineteenth centuries in northwestern Europe [and has]…a relatively narrow base both in time and space; and the evidence has yet to be produced that it is the natural form of rule for peoples outside those narrow perimeters' (1977: 41-43). The ensuing third wave of democracy has lightened an increasing amount of research about the prospects for further spreading democracy, and few believe that the positive connection between Christianity and democracy excludes other cultures from developing democracy. As the most fervent opponent to democracy, stands most of the Muslim Middle East. The Middle East is a region dominated by Islam, and it is also a region with very few democratic regimes. Is there a connection between these two observations? Whether it is Islam itself, or certain aspects of Islam emphasized by rulers to justify their authoritarian regimes, which cause the current lack of democracy in Muslim-dominated states, is an important one. The association between Islam and authoritarianism is apparent and striking, but the reason behind this is complex and controversial. Most certainly, the link between Islam and authoritarianism is not causal. Participatory strands within Islam exist, and so do Islamic liberalism, and secular states where Muslims constitute a religious majority.

Empirical research on the relationship between religion and democracy has been conducted, and the results indicate support for the association between Protestant Christianity and democracy, but not for the negative link between Islam and democracy (Hadenius, 1992; Huntington, 1984, 1991; Midlarsky, 1998). 'In the category where Christianity predominates, the degree of democracy clearly exceeds the average for the third world as a whole, while the Muslim countries fall far short of this level'. Hadenius finds a significant relationship between Protestants and democracy (1992: 120). However, he did not verify the opposite finding for Islam. When controlling for socio-economic status 'the negative connection for Islam is then reduced to a low, insignificant level' (1992: 121).

In order to test for the whether it is Islam rather than the Middle East and North Africa region that is prone to conflict, I include a dummy for all Islamic countries (all current member of the Organization of Islamic Conference) and advance the hypothesis:

H14: Islamic countries are more prone to conflict than non-Islamic countries

3. Research Design

This chapter opens with a brief discussion on the ongoing methodological debates, and highlights the strengths and weaknesses of both qualitative and quantitative research methods. The Collier & Hoeffler model is then presented followed by the operationalization of the variables. A summary of the hypotheses concludes the chapter.

3.1 Qualitative vs. Quantitative Methods

In the field of social science, antagonism between quantitative and qualitative researchers has at times resembled a warlike situation. Within the quantitative field, political scientists and economists have dug their own trenches and seldom crossed over to see what is happening in the other camp. Attempting to bring this methodological war to an end, King, Keohane & Verba (1994) emphasize the centrality of one common standard: scientific inference. In order to claim to be doing social science, the common standard for all researchers is that a 'coherent account of causality needs to specify how the effects are exerted' (ibid: 85).

The strengths of the case study literature lie in its detailed knowledge and presentation of a complex reality. Low-N studies aim at identifying necessary or sufficient variables, in order to present a clear account of the causal mechanisms leading to the phenomenon that is being studied. In an ideal world, with abundant research funding and human resources, detailed case studies could be conducted on every single event. This is far from a real life description. Limited resources force case studies to be selected out of a large universe of conflicts. Much of the conflict literature has been criticized for selecting cases on the dependent variable, i.e. only cases in which conflict has occurred (Gleditsch, 1998: 391; Levy, 2001). Also, researchers working in a conflict area can be blinded by the prevailing rhetoric. Collier (1999) emphasize the deluding role of the narrative:

> … since both greed-motivated and grievance-motivated rebel organizations will embed their behaviour in a narrative of grievance, the observation of that narrative provides no informational content to the researcher as to the true motivation for rebellion. To discover the truth we need a different research approach (1999:1-2)

Large-N researchers would argue that just like an impressionist painting, one needs to take a few steps back in order to see the full picture. Large-N studies cover large parts, or even the entire universe, of the research subject in question. Thus, they test hypotheses over a much broader set of contexts, and are less seldom criticized on the ground of case selection.

A common criticism of large-N studies is that 'correlation is not causation' (King, Keohane & Verba, 1994: 75). However, this does not rule out that researchers can state causal hypotheses or draw causal suppositions. A significant statistical relationship does not imply that the relationship is causal, but can be right in predicting *probabilistic*, causal relationship (King, Keohane & Verba, 1994: 87.).

The field of civil war studies is theoretically impoverished, and provides several challenges to large-N studies of the area. A general problem is that lack of theory always will lead to an under-specified model. Another apparent weakness of quantitative studies lies in the use of aggregated data. Most studies use states as the unit of analysis, and data on this level might be unsuitable for examining conflicts that are embedded in local or regional conditions. However, it is difficult to agree upon an appropriate sub-national level, and this would also make comparative studies very difficult. Until now, data on the national level are widely available, and most quantitative studies therefore address this level. Quantitative and aggregated studies also suffer from the quality and availability of data. If data are not reliable and accessible, advanced statistical tools are of little help.

In addition to the lack of a well-specified theory, the quantitative field of the study of civil war is riddled with methodological challenges. Gates (2002) outlines five fundamental problems affecting quantitative analysis of civil conflict: non-independence (spatial and temporal dependence), unmeasured heterogeneity (omitted variable bias), endogeneity, missing data bias, and rareness of the outcome variable (2002: 20).

While rareness of interstate wars is a problem, this is less so for the more frequent civil wars (Gates 2002: 22). Correcting for spatial dependence is a fairly new development and is not used in this study. Gleditsch & Ward (2001) have developed elaborate techniques and a database. In this thesis, none of these techniques are used.

However, the regional dummies partly control for spatial dependence. Temporal dependence is partly controlled for by including a variable measuring time since last conflict outbreak.

Of particular importance to this analysis is endogenity and missing data bias. Endogenity presents a problem in that civil wars clearly affect central variables that are used to explain the causes of civil war, in particular economic development and democracy. Also, the quality and availability of data might be related to level of economic development: poor and hungry people do not give priority to statistics. Corrupt regimes seldom present reliable statistics revealing the way and rate of spending of public funds. Models that include income inequality produce skewed samples: rich countries have fewer missing data than poor ones. Some statistical information, in particular income inequality and military spending, is misreported or not reported for political reasons. The problem of missing data can in some cases be solved by imputing data. Gary King has developed the *Amelia* imputation program that assigns values to missing observations based on earlier or later observations for that unit, and average values of similar units. However, imputation is only appropriate when data is missing randomly, rather than systematically (King et al., 2001).

Spillover effects and regional characteristics (spatial) and history (temporal) dependence also influence the results in quantitative analysis of civil wars. Political scientists and economists are continuously developing new methods and research techniques to address these challenges (Beck & Katz, 1997; Beck, Katz & Tucker, 1998; Box-Steffensmeier & Zorn, 1998; Gleditsch & Ward, 2001; Murdoch & Sandler, 2002). Despite these methodological challenges, this thesis bases its analysis on the best data available and tries to address some of the methodological problems. Data and methods are constantly improving and the results from this thesis will hopefully be a small contribution in the right direction.

3.2 Value Added to the Resources-Conflict Research

A good amount of systematic, comparative and empirical research on the relationship between civil war and natural resources has been conducted. However, the results are diverging, and more research on the complex relationship between natural resources

and conflict is needed. This thesis will add to the resources-conflict nexus in several ways. First, Collier & Hoeffler's model will be tested with different specifications for regime type, natural resources and conflict. This will allow us to investigate whether the five-year panel data design influence the Collier & Hoeffler results. Including a different measurement for regime type will hopefully shed some light on why, in contrast to a plethora of findings, Collier & Hoeffler find no significant results for regime type. However, CH only tested for a linear relationship between regime type and conflict. I include a squared term in order to investigate the possibility of a curvilinear relationship. Should the inverted-U relationship between regime type and conflict be found, this will strengthen both the grievance and opportunity aspect of CH's model. The link between natural resources and conflict is tested for two sub-sets of primary commodities: oil and minerals. Also, the Collier & Hoeffler model is put to a harder test by using the PRIO/Uppsala conflict data, with a lower threshold of conflict. Furthermore, the study examines the Middle East and North Africa. The region exhibits a unique combination of levels of natural resource dependence, economic development, social and political structure that demands particular investigation. Finally, this study goes beyond the time period investigated in the studies of de Soysa, 2002 (1989-99); Ellingsen & Gleditsch, 1997 (1973-92); Hauge & Ellingsen, 2001 (1980-92); Sachs & Warner, 2001; (1970-90).

3.3 The Collier & Hoeffler Method

Based on the model of civil war proposed by Collier & Hoeffler (2001), this thesis replicates the model and results in 'On the Incidence of Civil War in Africa' (2002), and uses their baseline model on the Middle East and North Africa region. The baseline model used in the 'On the Incidence of Civil War in Africa' article (2002)—and the framework for the replication and analysis in this thesis—thus contain the variables GDP per capita, GDP growth, primary commodity export, social fractionalization, ethnic dominance, peace duration, population size and dispersion.

Collier & Hoeffler's dataset comprises information on 161 states from 1960 to 1999. The entire period of analysis is divided into eight sub-periods: 1960-64, 1965-69, … 1995-99. The model uses simple logit regression to predict the probability of a

civil war breaking out in each of the five-year periods. Logistic regression (or logit) analysis is appropriate when the dependent variable is dichotomous and skewed. Also, logistic regression presupposes no assumed relationship between the dependent variable and the independent ones, and thus handles all forms of relationships between them, be it curvilinear, s-shaped or linear (Helland, 1999). The statistical program STATA, version 7.0 (StataCorp., 2001) is used to run the analyses.

The dependent variable takes the value 1 for periods when a conflict starts, as missing in the years that the conflict continues, and 0 for the non-event, periods with peace. The dependent variable is therefore dichotomous, and OLS regression is inappropriate as it may predict values outside the 0–1 interval. The logit model is specified as

$$Log\ (P_{it} / (1-P_{it}) = \alpha + \beta X_{it} + e_{it} \qquad (1)$$

where α is the intercept, βX is a set of explanatory variables with corresponding coefficients, and e is the random error term, for country $_i$ at time $_t$. The probability of a war start is calculated by applying the formula:

$$\hat{p} = exp\ Z / (1 + exp\ Z) \qquad (2)$$

The Collier & Hoeffler Model and Design

The theoretical aspects of the Collier & Hoeffler's model were discussed in the previous chapter. The Collier & Hoeffler research design also merits commentary. While most analyses on civil war organize the data in a country-year structure, Collier & Hoeffler have chosen to use five-year periods as their unit of analysis. This design is often used in economics in order to stabilize the variables and lessen the impacts of possibly artificial fluctuations. Another advantage by using five-year periods could be that such a design has fewer missing data. However, interpolating data could have solved parts of this problem. A problem with using this design is that abrupt changes from one year to another are covered up.

3.4 Operationalizations

Sources used for generating the dataset are internationally recognized, and were readily available in various databanks. In the five-year periods dataset, the total number of country-periods is 1,036. The most extensive regression contains 709 observations. In the one-year dataset, the total number of country-years between 1960 and 1997 is 5,418. The most extensive regression contains 3,928 observations, the least extensive 2,307 (when including regime type, oil and mineral dependency). I was unable to obtain data on population beyond 1997. Therefore, *all* the analyses based on the annualized dataset therefore cover 'only' the period from 1960 to 1997. Although not ideal, I do not believe the results are dramatically influenced by not including the years 1998 and 1999.

3.4.1 Domestic Armed Conflict

The Collier & Hoeffler model predicts the probability that a civil war is *initiated* in the period of analysis. Studies on the causes of civil war vary in their choice of the dependent variable. While some researchers include war incidence (Gleditsch & Hegre, 1997; Russett & Oneal, 2001: 95), Bremer (1992) argues that the reasons why war starts (onset) are different from the reasons why war continues (incidence, which includes all years of a conflict). Collier & Hoeffler follow Bremer's line of arguing, and I follow Collier & Hoeffler's. In this study the dependent variable is assigned the value 1 if a conflict *starts* in the period or year. In the cases where a war continues into the next period or year, the variable is coded as missing. In periods and year with no conflict onset or incidence (peace), the variable is coded as 0.

The Correlates of War Project

The Correlates of War (COW) Project[9] has since 1963 studied the conditions associated with the outbreak of wars and militarized disputes. The COW Project has one of

[9]First at University of Michigan (http://www.umich.edu/~cowproj/index.html), now at Pennsylvania State University http://cow2.la.psu.edu and Peace Science Society http://pss.la.psu.edu/DATARES.HTM

the leading data collection programs in the field of political science, and is one of the most frequently cited in quantitative comparative and international politics research.

A civil war is defined by COW as a sustained combat between two armed opponents within the territorial boundaries of a state resulting in at least 1,000 battle-deaths per year (2002:)[10]. Collier & Hoeffler generated their dependent variable from COW data for the period 1960-92 (Singer & Small, 1994; Small & Singer, 1982). Based on their definitions, Nicholas Sambanis updated the dataset from 1993 to 1999. Collier & Hoeffler's dataset contains 78 civil wars, of which 46 were included in the regression analysis. For the five-year period dataset, the average percentage of civil war onset is 7.3 percent

While the 1,000 battle-deaths criterion is well accepted, there is disagreement on how to count deaths. In addition, the strict 1,000 battle-deaths criterion per year discriminates against countries with smaller populations, and therefore excludes well-known and long-lasting conflicts such as in Northern Ireland. I therefore include another dataset with a lower threshold for armed domestic conflict. The COW conflict data are only used in the first part of the analysis, when Collier & Hoeffler's results are replicated.

The PRIO/Uppsala Dataset

The second dependent variable is taken from a newly expanded dataset created by researchers at the Department of Peace and Conflict Research at the University of Uppsala and the International Peace Research Institute, Oslo (Gleditsch et al., 2002). The starting point was Wallensten & Sollenberg's dataset on armed conflict from 1989, which has been published annually since 1993 in the *Journal of Peace Research,* and was extended to include the entire post-World War II era (1946-2001).

Armed conflict is defined as a 'contested incompatibility which concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths' (Wallensteen & Sollenberg, 1999: 605). A state is defined as

> an internationally recognized sovereign government controlling a specified territory, or an internationally unrecognized government controlling a specified territory

10 http://www.umich.edu/~cowproj/dataset.html#CivilWar

> whose sovereignty is not disputed by another internationally recognized sovereign government previously controlling the same territory (1999: 605).

The PRIO/Uppsala dataset thus uses a lower threshold, but also divides conflict into three levels: minor, intermediate and war[11]. When using the PRIO/Uppsala data, I run the Collier & Hoeffler model on an annualized dataset and present the analysis for the highest level (civil war), as well as for all conflict levels. The correlation between civil war in COW and the PRIO/Uppsala dataset is high (Gleditsch et al., 2001). In the annualized dataset, only PRIO/Uppsala data are therefore used. In the period analyzed in this thesis (1960-97) 80 civil war onsets and 157 armed civil conflict onsets were recorded. Both civil wars and armed civil conflict onsets are rather rare events: 1.6 percent of the country years experienced an outbreak of civil war, and armed domestic conflict occurred in 3.4 percent of the observations.

A possible downside of using a lower threshold for conflict is reduced reliability. Due to ready access to information and modern forms of communication, the reliability of the PRIO/Uppsala data is high for the years of the original dataset (1989-2000). However, the recent backdating of the dataset back to 1945 is necessarily based on limited and inaccurate historical records, and thus increases the likelihood that episodes of armed conflict are underreported, with low-intensity armed conflicts being more likely to be underreported than wars. Also, smaller conflicts taking place in remote areas and in closed totalitarian/repressive regimes are more likely to go unnoticed by outside observers and international media.

A problem for both the dependent variables is accounting for simultaneous conflict in a country. The number of such overlapping conflicts is greater for the PRIO/Uppsala data than COW, since the Uppsala data include a large number of low-intensity conflicts. The PRIO/Uppsala dataset contain a substantial number of conflicts that broke out at a time when there was one or more other conflict going on in the same country. Large countries such as India and Indonesia are examples of this (see the PRIO/Uppsala dataset in Appendix 7). Simultaneous conflicts pose a methodological challenge since studies of armed conflict onset usually study transitions

[11] Minor armed conflict: the number of battle-related deaths during the course of the conflict is between 25 and 1,000. Intermediate armed conflict: more than 1,000 battle-related deaths recorded during the course of the conflict, but fewer than 1,000 in any given year. War: more than 1,000 battle-related deaths in any given year (Wallensten and Sollenberg 1998, 595).

from peace to war, omitting consecutive years of war. Urdal (2002) coded two different variables, 'Onset1' (armed conflicts that erupted in a state of peace) and 'Onset2' (all armed conflict onsets regardless of whether the conflict broke out when another conflict was taking place in the same country). Nevertheless, the difference between the two coding schemes did not influence the results much. This thesis notes this methodological challenge, but in order to follow the CH design, and due to time and space constraints, it does not follow Urdal's suggestion. Collier & Hoeffler censored simultaneous conflicts. When using conflict data from the PRIO/Uppsala dataset, I included all outbreaks of new conflicts (civil war and armed civil conflict) as defined by the PRIO/Uppsala dataset's conflict number and sub-ID (See Appendix 7).

3.4.2 Economic Variables

Data on economic variables originate from two well-reputed sources, the *Penn World Tables* (Summers & Heston, 1991) and the *World Development Indicators (World Bank, various years)*. These sources are widely recognized to contain the best economic data available. In the five-year period dataset, all data is measured at the beginning of each sub-period, 1965, 1970, ..., 1995.

GDP per capita

The level of economic development can be measured in numerous ways, and common measurements are energy consumption per capita, level of education and GDP per capita.[12] Collier & Hoeffler ran two models using male secondary schooling and GDP per capita. However, the two are highly correlated, and only GDP per capita is included in the final analysis.

Income is measured as real purchasing power parity (PPP)-adjusted GDP per capita. The primary dataset is the Penn World Tables 5.6 (Summers & Heston, 1991), which covers the 1960-92 period. For the last period in the five-year dataset, growth rates of real PPP adjusted GDP per capita data from the World Bank's World Development Indicators 1998 was used to calculated income data for the 1995-99 period.

[12] Urdal (2002) argues for the inclusion of infant mortality rate as a measurement of economic development and income inequality. This thesis does not consider this measurement, but follows Collier & Hoeffler's design rather strictly.

Income data is measured at the beginning of each sub-period, 1965, 1970, ... , 1995. In the annualized dataset, numbers of GDP per capita are only from the World Bank. In both datasets, the natural logarithm of GDP per capita was used instead of the original one, in order to take into account that a difference between say $200 and $700 is of greater importance to conflict than the difference between $ 20,000 and $20,500.

GDP growth

Based on the GDP per capita data, the average periodical/annual growth rate was calculated based on the previous five-year period and year. GDP growth in the previous period/year is used as a proxy for economic opportunities. In both datasets, this information was then lagged with one period or year.

3.4.3 Political Variables

In the initial analysis, Collier & Hoeffler used data on regime type from the Polity III dataset (Jaggers & Gurr, 1995.) Regime type was excluded from the final analysis because it did not show any significant values in their analysis. This is in contrast to a plethora of empirical findings. Hegre et al. (2001) emphasize the importance of political stability as well as the level of democracy in the outbreak of civil war. In this study I therefore include variables for regime type and transition.

Regime Type

The *Polity III Project* (Jaggers & Gurr, 1995) has generated widely used indexes for institutionalized democracy and institutionalized autocracy for all independent states with population over 500,000 from 1800 to 1994. The index is created on the basis of characteristics such as competitiveness in political participation and executive recruitment, openness of executive recruitment and the position of the chief executive. Level of democracy and autocracy varies from 0 (least) to 10 (most).

Collier & Hoeffler used data on regimes from the Polity III dataset and found no significant results. Instead of using Polity III data this thesis uses ‘Polyarchy’, a

composite index of democracy developed by Tatu Vanhanen (2000).[13] Polyarchy covers 187 countries from 1810 to 1998. Polyarchy ranges from 0 (least democratic) to 47.11 (most democratic). In the country-year dataset, the annual Polyarchy were kept. In the five-year period, the value for the first year in the period is assigned. Due to the discrepancy between the Collier & Hoeffler and Hegre et. al (2001), as well as the clear policy implications of the importance of regime type, this variable is given particular attention in this study. I suspect that the reason why results from the five-year dataset are insignificant might be due to five-year period research design's failure to account for possible swift changes in regime scores. This suspicion is examined when the Collier & Hoeffler model is run on an expanded dataset using a *country year* format.

Regime Transition

Semi-democracies are hypothesized to be the most conflict-prone. This category includes both regimes in transition and institutional inconsistent regimes. In order to try to control for whether transition might make up for parts of this relationship—as opposed to or institutional inconsistent regimes, transition is introduced as a dummy variable. The variable takes the value 1 if a change in the Polyarchy score doubles or halves from one year to the next.

3.4.4 Natural Resource Dependence

Collier & Hoeffler's primary commodity export variable proxies the abundance of natural resources. Data on primary commodity exports and GDP were taken from the World Bank, and is measured in current US dollars. Collier & Hoeffler never states the exact content of this variable: 'primary commodities include a variety of products such as oil, diamonds, metals, food, and beverages' (2002: 16). One obvious criticism of Collier & Hoeffler is that this category is too wide to mean or measure anything. How are agricultural products supposed to fuel civil war? Agricultural products do not yield a high level of rent. Also, a main source of lucrative income that is not included in this category at all is narcotics. However, for obvious reasons, it is next to

[13] See also http://www.sv.ntnu.no/iss/data/vanhanen/

impossible to obtain reliable data on drugs. Based on Le Billon and others, I argued that the category 'primary commodity exports' must be broken up. The unique technology, infrastructure and the dominant role of oil in the international commodity market, in addition to its influence on economic and political development, justifies paying particular attention to oil. While it would be interesting to test for other types of primary commodities (oil, minerals/diamonds, drugs, timber etc.) data constraints restrict the differentiation into two variables: oil and mineral export dependence. Breaking down the types of minerals yields a data matrix with very many missing variables.

Natural resources dependence is proxied in three ways. In the five-year period dataset, data from WDI are used to calculate the ratio of primary commodity exports to GDP. The data were measured at the beginning of each sub-period. In the annualized dataset, the values from the five-year period dataset were copied. This means that the value from the 1960 period was assigned to both 1960, 1961, 1962, 1963 and 1964 in the annualized dataset.

Data from WDI were also used to create the oil dependency and mineral dependency variables. These variables were also calculated as the value of oil and mineral export to GDP. Following the suggestion from Sachs & Warner (1999) I correct the values for Singapore and Trinidad & Tobago to reflect their real export values. In the annualized dataset, primary commodity, oil and mineral dependency are set to 0.001 for these two countries.

3.4.5 Culture and Identity

Social Fractionalization

Collier & Hoeffler proxy social fractionalization as a combined measure of ethnic and religious fractionalization. The level of detail necessitates a complete quotation of their measurement:

> Ethnic fractionalization is measured by the ethnolinguistic fractionalization index. It measure the probability that two randomly individuals from a given country do not speak the same language. Data are only available for 1960. In the economic literature, this measure was first used by Mauro. Using data from Barret (1982) on religious affiliation, we constructed an analogous religious fractionalization index. Fol-

> lowing Barro (1997) we aggregated the various religious affiliations into nine categories: Catholic, Protestant, Muslim, Jew, Hindu, Buddhist, Eastern Religions (other than Buddhist), Indigenous Religions and no religious affiliation. Data is available for 1970 and 1980 and the values are very similar. For 1960, 1965 and 1970 we used the 1970 data and for 1980, 1985, 1990 and 1995 we use the 1980 data. For 1975 we use the average of the 1970 and 1980 data.
>
> The fractionalization indices range from zero to 100. A value of zero indicates that the society is completely homogenous whereas a value of 100 would characterize a completely heterogeneous society.
>
> We calculated our social fractionalization index as the product of the ethnolinguistic fractionalization and the religious fractionalization index plus the ethnolinguistic or the religious fractionalization index, whichever is the greater. By adding either index we avoid classifying a country as homogenous (a value of zero) if the country is ethnically homogenous but religiously divers, or vice versa. In Collier and Hoeffler (2000), Table 8, we show that this aggregation rule is superior to variants (2002: 26-27)

Ethnic Dominance

This dummy variable takes the value 1 if a single ethnolinguistic group makes up 45-90 percent of the total population. The variable takes the value 0 if not. The indicator of ethnic dominance was calculated using ethnolinguistic data from Department of Geodesy and Cartography (1964). In the annualized dataset, this variable was copied from Collier & Hoeffler's original dataset.

3.4.6 Other Variables

Population

This variable measures the total population in each country, and is taken from the World Bank's Development Indicators from various years. In the five-year period, the values are taken from the first year in the period. In both dataset the variables are logged. Data were only available up until 1997.

Geographic Dispersion

Collier & Hoeffler generated a Gini coefficient of population dispersion for each country. The variable takes the value 0 if the total population is evenly distributed around the country, and 1 if it is concentrated in one area. Data were only available

for 1990 and 1995. For the six first periods, data from 1990 were used. In the annual dataset, this variable was copied.

Peace Duration

Both datasets include a variable measuring the time since the last civil conflict onset. In the five-year dataset, countries that never experienced a civil war are assigned the value 172 months (time since end of World War II until 1960), plus 60 months for each consecutive five-year period with peace. In the one-year dataset, the variable is measured in years. Countries are assigned the value 10 if the first year they are included in the dataset is 1955. This is done on the underlying assumption that the country has been at peace since the end of World War II. Countries that join the dataset in all other years than 1955 are assigned the value 1 in the first year. If the country involved in a conflict when the dataset begins, the country is assigned the value 0 for that year.

Dummy Variables

Regions

To control for region specific effects Collier & Hoeffler included two dummies for Sub-Saharan Africa[14] and French Sub-Saharan Africa.[15] This thesis investigates the Middle East and North Africa. The Middle East and North Africa dummy takes the value 1 one for the following 19 countries: Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Israel, Lebanon, Syria, Turkey, Iran, Iraq, Kuwait, Saudi Arabia, United Arab Emirates, Bahrain, Qatar, Oman, Yemen.

OECD

I include a dummy variable on membership in the western-dominated Organization for Economic Cooperation and Development (OECD). The OECD variable is used to

[14] Takes the value 1 for the following countries: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Brazzaville, Djibouti, Democratic Republic of Congo, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe

[15] Takes the value 1 for the following countries: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Gabon, Ivory Coast, Mali, Niger, Senegal and Togo.

generate the 'other developing countries' group in the descriptive statistics for Sub-Saharan Africa and the Middle East and North Africa.

Islam

I define a country as Islamic if it is a current member of the Organization of the Islamic Conference (OIC). The organization was established in 1969, but all current members are assigned the value 1 and non-members the value 0, for the entire period. There are good reasons to argue that all current members have had a substantial Muslim population. The following countries are members of the OIC: Afghanistan, Albania, Algeria, Azerbaijan, Bahrain, Bangladesh, Benin, *Brunei*, Burkina Faso, Cameroon, Chad, Comoros, Ivory Coast, Djibouti, Egypt, Gabon, Gambia, Guinea, Guinea-Bissau, Guyana, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kuwait, Kyrgystan, Lebanon, Libya, Malaysia, *Maldives*, Mali, Mauritania, Morocco, Mozambique, Niger, Nigeria, Oman, Pakistan, *Palestine*, Qatar, Saudi Arabia, Senegal, Sierra Leone, Somalia, Sudan, *Suriname*, Syria, Tajikistan, Togo, Tunisia, Turkey, Turkmenistan, Uganda, United Arab Emirates, Uzbekistan and Yemen.[16] Countries in italics were not included in the dataset.

[16] http://www.sesrtcic.org/members/default.shtml

3.5 Summary of Hypotheses

The hypotheses were developed on the basis of the discussion in Chapter 2. I do not believe that the causes of civil war are different from the causes of armed civil conflict, and all hypotheses are therefore tested on both levels of conflict. The following hypothesis are tested in Chapter 4:

Economic Aspects:
H1: Countries with low levels of GDP per capita are more likely to experience civil war than countries with high levels GDP per capita
H2: Countries with lower rates of economic growth are more likely to experience conflict that countries with higher growth

Social and Cultural Aspects:
H3: Socially fractionalized countries are more likely to experience civil war than homogenous countries
H4: Countries where one ethnic group constitute between 45 and 90 percent of the population are more likely to experience civil war than countries with a very large ethnic majority, or no ethnic majority at all
H6: Countries with high levels of social fractionalization are less likely to experience civil war
H14: Islamic countries are more prone to conflict than non-Islamic countries

Political Aspects:
H5: Semi-democracies are more likely to experience civil war than either democracies and autocracies
H13: Countries in transition are more prone to civil war

Natural Resources and Geographical Aspects:
H7: Countries with medium levels of primary commodity dependence are more likely to experience civil war, than countries with low and high levels
H11: Oil dependence displays an inverted U-shaped relationship with civil war
H12: Mineral dependency displays an inverted U-shaped relationship with civil war
H8: Countries where the population us evenly spread around the country are more likely to experience civil war than countries with concentrated populations

Control: Size and Time
H9: Countries with large populations are more likely to experience civil war than countries with small populations
H10: The longer time since a civil war broke out, the less likely a country is to experience civil war

4. Results and Analyses

This chapter is divided into two parts. The first part reexamines and replicates the model and results presented in Collier & Hoeffler's article 'On the Incidence of Civil War in Africa' (2002). During the process of replicating the CH dataset, model and findings, I discovered several inaccuracies in the dataset. Nevertheless, when rerunning the same regressions on my dataset, CH main findings hold true.

Most quantitative analyses on the causes of civil war are conducted on a country-year basis. CH's model is based on a five-year period design, and I develop the CH dataset into a country year format. The second part of this chapter runs CH's baseline model on the annualized dataset. The change in the structure and setup of the dataset produced some interesting divergences from the original five-year design.

Finally, I apply the CH model on a more inclusive dataset using armed civil conflict from the PRIO/Uppsala dataset as the dependent variable. This variable sets a much lower threshold for armed conflict, using a criterion of 25 battle-related deaths per year. By analyzing this, I test if the CH model is appropriate for armed conflicts on a level that falls below the definition of a civil war.

4.1 Replicating the CH Model

The original dataset used by Collier & Hoeffler in the 2002 article is available on the website of the *Journal of Conflict Resolution*.[17] During the process of replicating their findings and examining the data, I discovered several, smaller problems with the dataset. First, CH describe their dataset as consisting of information for 161 countries from 1960-99. The dataset is divided into eight five-year periods, and CH state that this yields '1,288 potential observations' (2002: 26). CH's dataset contain 1,288 observations, with the most observations for population (1,266) and the fewest for economic growth (918). Not all countries existed in the entire period of analysis, but had been assigned values for several variables. These 'fictitious' variables are dropped

[17] http://www.yale.edu/unsy/jcr/jcrdata.htm

from the regression, but they are included in the calculation of the dataset's mean values of the dataset. More seriously, a few countries that had been assigned values in year before they gained independence were included in the regression.[18] Due to the discrepancies between the two datasets, Håvard Strand generated the annual dataset from the same sources as the ones used by Collier & Hoeffler. In my version of the dataset, I also excluded a few small island states.[19] In my dataset, the highest potential number of observations is 1,036. Appendix 1 presents a complete list of all countries, periods and conflict onsets included in my five-year-period dataset and analyses.

When running the baseline model regression, a maximum of 709 observations, as opposed to 750 in CH, were included. My analysis includes 52 conflicts, compared to 46 in CH. CH claim that their analysis covers the entire period from 1960 to 1999 but this is not completely true. Information on economic growth for 1960 is missing for all countries.[20] Consequently, the CH results cover only the 1965-99 period. CH's published results are presented in Table 5, and the replication based on my dataset in Table 6.

Table 5. *Accounting for Civil War1965-99: Results from Collier & Hoeffler (2002)*

	β	st.e.	β	st.e.	β	st.e.
ln GDP per capita	–0.950	(0.245)***	–1.053	(0.289)***	–0.965	(0.244)***
GDP growth $_{t-1}$	–0.098	(0.041)**	–0.103	(0.042)**	–0.098	(0.042)**
Prim. comm. exports	16.773	(5.206)***	16.691	(5.175)***	15.989	(5.218)***
Prim. comm. exports ^{2}	–23.800	(10.040)**	–23.532	(9.958)**	–22.942	(10.023)**
Social fractionalization	–0.0002	0.0001)***	–0.0002	(0.0001)**	–0.0002	(0.0001)**
Ethnic dominance	0.480	(0.328)	0.449	(0.331)	0.431	(0.330)
Peace duration	–0.004	(0.001)***	–0.004	(0.001)***	–0.004	(0.001)***
ln population	0.510	(0.128)***	0.473	(0.137)***	0.547	(0.130)***
Geographic dispersion	–0.992	(0.909)	–0.994	(0.907)	–0.775	(0.933)
Sub–Saharan Africa dummy			–0.370	(0.526)		
French SSA dummy					–0.885	(0.791)
Constant						
N	750		750		750	
Pseudo R^2	0.22		0.22		0.23	
Log Likelihood	–146.84		–146.50		–146.10	
Number of wars included	46		46		46	

***, **, * indicate significance at the 1, 5 and 10 percent level, respectively
CH did not report the value of the constant in their article

[18] In the regression Namibia (independent in 1990), Fiji (independenct in 1970), Djibouti (independent in 1977), Mauritius (independent 1968), Papua New Guinea (independent 1975) and Swaziland (independent 1968) were all included from 1965.
[19] The Bahamas, Belize, Cape Verde, Suriname, Vanuatu and West Samoa were excluded from my dataset.
[20] Economic growth is calculated as the difference between GDP per capita for one period and the following. Economic growth information is missing for 1960 because the dataset does not have numbers for the 1955-59 period.

Table 6. *Accounting for Civil War 1965-99: Replicating Collier & Hoeffler (2002)*

	β	st.e.	β	st.e.	β	st.e.
ln GDP per capita	–0.929	(0.244)***	–1.050	(0.288)***	–0.941	0.243)***
GDP growth $_{t-1}$	–0.096	(0.041)**	–0.101	(0.042)**	–0.096	(0.042)**
Prim. comm.. exports	16.120	(5.213)***	15.972	(5.164)***	15.183	(5.233)***
Prim. comm.. exports ^{2}	–22.602	(10.030)**	–22.157	(9.908)**	–21.520	(10.011)**
Social fractionalization	–0.0002	(0.0001)***	–0.0002	(0.0001)*	–0.0002	(0.0001)**
Ethnic dominance	0.501	(0.327)	0.466	(0.330)	0.454	(0.328)
Peace duration	–0.004	(0.001)***	–0.004	(0.001)***	–0.004	(0.001)***
ln population	0.485	(0.131)***	0.437	(0.141)***	0.442	(0.134)***
Geographic dispersion	–1.084	(0.925)	–1.102	(0.927)	–0.853	(0.951)
Sub-Saharan Africa dummy			–0.449	(0.537)		
French SSA dummy					–0.933	(0.791)
Constant	–3.067	(2.518)	–1.288	(3.292)	–2.354	(2.563)
N	709		709		709	
Pseudo R^2	0.21		0.22		0.22	
Log Likelihood	–146.04		–145.69		–145.20	
Number of wars included	52		52		52	

***, **, * indicate significance at the 1, 5 and 10 percent level, respectively.

While there are several minor differences from the original CH dataset, the results almost the same. Only social fractionalization drops down to a significance level of 0.10 for the regression including the dummy variable for Sub-Saharan Africa. Also, the regional dummies have slightly higher values. As in the CH article, when the model is rerun on my dataset, economic wealth and growth, social fractionalization and longer periods peace reduce the propensity for conflict, while a large population increases the risk. Primary commodity dependence displays a curvilinear relationship, while ethnic dominance is insignificant. Geographic dispersion is not significant at the 0.05 level.

Collier & Hoeffler dropped all insignificant independent variables sequentially[21] (2001: 11), and ended up with the model used in the second article (2002). In the 2002 analysis, both the ethnic dominance and the geographic dispersion variables are consistently insignificant. However, they are not dropped from the analyses. Geographical dispersion is missing for 11 countries: USA, Canada, Poland, Yugoslavia, Bosnia-Herzegovina, Yemen Arab Republic, Yemen People's Republic, Bahrain, Republic of China (Taiwan), Cambodia and Singapore. These countries are therefore excluded in the regression analyses, and this leads to a loss of 72 observations in the

[21] This selection seems to have been made by only looking at the P-values/Z scores

dataset, and 39 in the logit regression. Running the CH model without geographical dispersion did not significantly alter the results (Table 7, first column). The inclusion of the ethnic dominance variable does not lead to missing observations. Leaving it out of the model does also not change the results much (Table 7, third column). Only one conflict was added to the regression sample when geographic dispersion was left out.

Table 7. *Accounting for Civil War 1965-99: The CH Model without Geographical Dispersion, and without Geographical Dispersion and Ethnic Dominance*

	β	st.e.	β	st.e.
ln GDP per capita	–0.829	(0.229)***	–0.788	(0.227)***
GDP growth $_{t-1}$	–0.111	(0.411)***	–0.107	(0.041)***
Prim. comm.. exports	12.899	(4.640)***	12.414	(4.651)***
Prim. comm. exports ^{2}	–17.972	(8.873)**	–17.142	(8.876)**
Social fractionalization	–0.002	(0.0001)**	–0.0002	(0.0001)**
Ethnic dominance (45-90%)	0.477	(0.322)		
Peace duration	–0.004	(0.001)***	–0.004	(0.001)***
ln population	0.422	(0.122)***	0.393	(0.119)***
Geographical dispersion				
Constant	–3.230	(2.464)	–2.815	(2.406)
N	748		748	
Pseudo R^2	0.20		0.19	
Log Likelihood	–153.24		–154.32	
Number of wars included	53		53	

***, **, * indicate significance at the 1, 5 and 10 percent level, respectively.

The other variables obtain very similar coefficients in both models with and without geographical dispersion. This suggests that geographical dispersion taps into an aspect of causes of civil war that is not explained by the other variables included in the model.

A final criticism of the CH analysis is that the authors appear to determine whether the variables are significant or not, merely by looking at the significance level (p) returned by the computer program. This can be misleading and the researcher risks overlooking possibly interesting relationships. At least two other possibilities exist for assessing the importance of the variables included in the models. One is to compare the log likelihood value for a model with the variable in question, with the same model run on the same sample without the variables. The difference between the two models' log likelihood scores must then be checked with the chi-square/F-statistics table. For one degree of freedom (one variable added) the im-

provement in log likelihood log likelihood must be at least 3.8 points in order to be significant at the five percent level (Hamilton, 1992: 354). Another way to interpret the results and coefficients in a logit regression is to generate a graph based on the logit function. This presents the researcher with a more intuitive and visual representation of the relationship between the dependent variable and one (or two) independent variable(s) (Helland, 1999).

Comparing the log likelihood for a model with and without geographic dispersion, reveals that geographic dispersion significantly improves the models explanatory power (log likelihood is reduced from –153 to –146, which is significant for one degree of freedom.) Including ethnic dominance, however, does not significantly improve the model's log likelihood.

The sub-Saharan Africa and French African colonies dummies were not significant, and the replication therefore repeats CH's finding that there is no particular Africa-effect on conflict. I comment on the regional aspect of the analyses in Section 4.1.4 when I also run the baseline model with a dummy for the Middle East and North Africa region.

4.1.1 The CH Model with Regime Type

In the first model (2001), CH included only a linear term of regime type, using the well-known *Polity* index. Numerous studies confirm a curvilinear relationship between regime-type and civil war, but CH do not investigate this possibility. CH conclude that in a combined greed and grievance model, regime type is not significant. In this thesis, I investigate several other possible ways to include regime in the CH model. In the five-year period design, I replace Polity with a different measurement of regime type: the Polyarchy index developed by Vanhanen (2000). I ran the model with both a linear and squared terms. The results for the model with both terms are presented in the Table 8 below.

Table 8. *Accounting for Civil War 1960-99: The CH Model with Regime Type Added*

	β	st.e.
ln GDP per capita	–0.814	(0.274)***
GDP growth $_{t-1}$	–0.101	(0.041)**
Prim. comm. exports	15.622	(5.284)***
Prim. comm. exports ^{2}	–21.937	(10.027)**
Social fractionalization	–0.0002	(0.0001)**
Ethnic dominance	0.474	(0.333)
Peace duration	–0.004	(0.001)***
ln population	0.491	(0.133)***
Geographic dispersion	–1.175	(0.933)
Polyarchy	–0.027	(0.060)
Polyarchy ^{2}	0.00002	(0.002)
Constant	–3.809	(2.597)
N	707	
Pseudo R^2	0.22	
Log Likelihood	–142.74	

***, **, * indicate significance at the 1, 5 and 10 percent level, respectively.

Neither the linear nor the squared term of *Polyarchy* display statistically significant effects, either in terms of p or log likelihood. When comparing log likelihood for the original model with the model including the regime variable[22], log likelihood is reduced from 146.04 to -142.74. For two degrees of freedom (two variables added) to display a significant improvement (at the 0.05 level), log likelihood needs an improvement of around six points.

I also try to log, square and center the regime variables in order to check if the variable original distribution/skewness underreported its effect in the analysis. No significant results were found. Neither the *Polyarchy* nor *Polity* measurements of regime type are statistically significant within the CH design. In section 4.2, I investigate the possibility that regime type is sensitive to the research design chosen by CH. Regime scores can change rather swiftly, and using a five-year period design might underreport and not catch up on swift regime changes. The country year analysis will provide a better framework for analyzing the relationship between regime type and civil war.

[22] The two loglikelihood values can be compared directly because the model containing the regime variables is a subset of the original model.

4.1.2 The CH Model with Oil and Mineral Dependency

In the theoretical chapter, I argued that different natural resources may have different effects on conflict, and that CH's wide category of 'primary commodity exports' needed disaggregating. Due to data constraints, I could only include variables for oil and mineral dependency. I created a variable measuring the country's dependence on oil or minerals exports as the ratio of each commodity's to total export. The results are presented below in Table 9.

Table 9. *The CH Model with Oil and Mineral Dependency*

	β	st.e.
ln GDP per capita	0.962	(0.275)***
GDP growth $_{t-1}$	–0.061	(0.049)
Oil dependency	5.633	(3.368)*
Oil dependency ^{2}	–2.779	(5.262)
Mineral dependency	19.720	(49.616)
Mineral dependency ^{2}	–810.018	(1324.749)
Social fractionalization	–0.002	(0.001)*
Ethnic dominance	0.648	(0.363)*
Peace duration	–0.003	(0.001)***
ln population	0.221	(0.121)*
Geographic dispersion	–0.648	(1.037)
Constant	2.258	(2.831)
N	579	
Pseudo R^2	0.20	
Log Likelihood	–116.77	
Number of wars included	40	

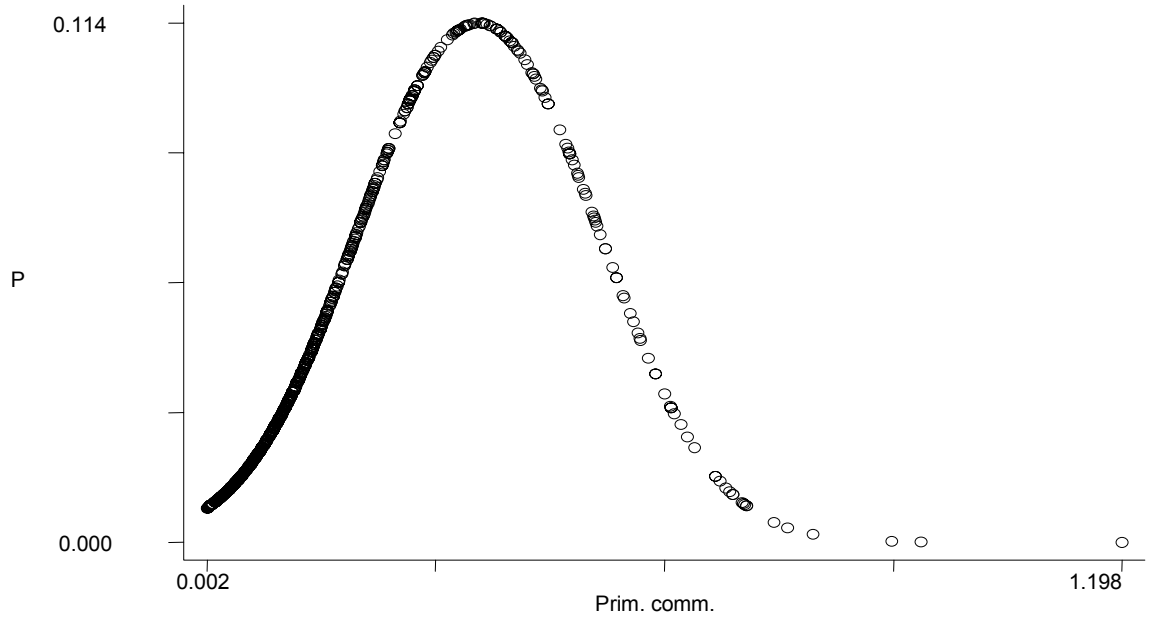
***, **, * indicate significance at the 1, 5 and 10 percent level, respectively.

Due to missing information for many countries on the oil and mineral dependency variables, the total number of observations included in the analysis is reduced to 579. When comparing the log likelihood for the two models (with an N of 579), the model containing oil and mineral dependency (and their squared terms) improves the log likelihood by (123.3-116.8) 6.5 points. This is not significant for four degrees of freedom.

The results and the coefficients in a logit regression are not intuitively easy to interpret and understand. Looking at the value and size of the coefficient is the first step. Both CH's primary commodity variable and oil and mineral dependency are positive on their own, and have a negative squared term. This indicates that the relationship between these variables and the probability of conflict in curvilinear: first

growing and then decreasing. Graphing them presents an intuitive and visual inspection. Figure 3 is based numbers in Table 8.

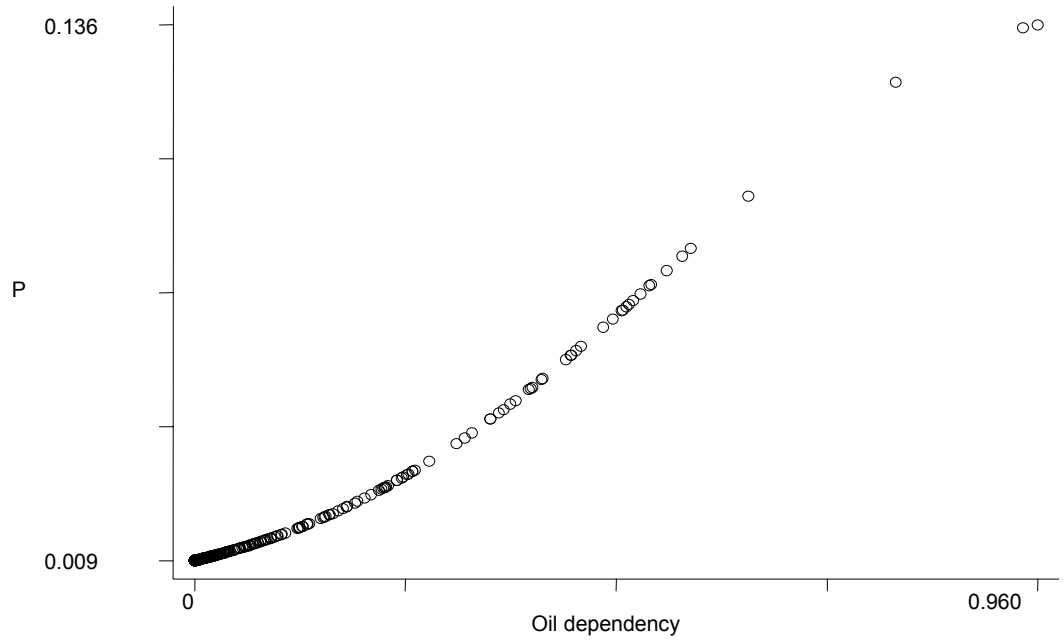
Figure 3. *The Effect of Primary Commodity Export on the Probability of Civil War*



The relationship is indeed curvilinear, and the results strengthen Hypothesis 7. Primary commodity export peaks at 11.4 percent, which is 56 percent higher than the sample average for civil war onsets at 7.3 percent. Countries in the medium 'primary commodity exports' range, face a higher risk for experiencing a civil war outbreak than countries with low or high levels.

I added oil dependence in the same model as primary commodity dependence, but obtained very weak results for oil dependence. The correlation between primary dependence and oil dependence is very high (0.66), indicating that oil dependence makes up the bulk of the primary commodities variable. In Table 9, I replace primary commodity exports with oil dependence and mineral dependence. Based on this table, I graphed the relationship between oil dependence and civil war in Figure 4.

Figure 4. *The Effect of Oil Dependency on the Probability of Civil War*



Rather surprisingly, the most oil-dependent countries are the most conflict-prone. In this dataset and design, more oil means more conflict. This is in contrast to rentier-state theory which argues that more oil means more money to either repress or buy off a people. In contrast to Hypothesis 11, oil dependency does not display a curvilinear relationship with civil war.

Also based on Table 9, I graphed the relationship between mineral dependence and civil war in Figure 5. Mineral dependency barely displayed the hypothesized curvilinear shape, the variable was far from significance. The curve peaked around 0.05 mineral export of total export, and obtained a maximum risk for conflict at 4.5 percent. The sample's average risk is 7.3 percent, and this implies that mineral dependency does not have much explanatory power.

In order to check for the possibility that oil and mineral dependency displays a linear relationship with conflict, I ran regressions with oil and mineral dependency without their squared terms. I checked p, log likelihood and plotted the graphs, but this did not reveal any interesting results.

Having replicated the CH model, and examined the effects of regime and natural resource dependence, I now move on to examine the regional conflict correlates for Africa and the Middle East.

4.1.3 Sub-Saharan Africa

Collier & Hoeffler's analysis of civil war in Africa could not detect a particular 'Africa effect' and CH conclude that civil wars in Africa were well explained by a general model. The underlying risk of conflict, however, was higher in Africa, notably because of economic factors. While its fragmented societies dampened conflict, Africa's dire economic straits made the continent more prone to conflict. The descriptive statistics tables reveals that this is also true for my dataset. I provide descriptive statistics for the entire sample, as well as for the observations included in the regression sample (See Appendix 3). This was done to examine the possibility that countries excluded from the regression due to missing data, are systematically different from countries included in the analysis.

The replication table, Table 6, confirms that the Africa dummies are not significant. CH next generate a series of interaction variables in order to test for whether the variables might have differential effects in Africa. (2002: 20.) CH find that none of the interaction terms are significant, and so do I in my analysis. The CH model can therefore be applied to Africa, as the relationships found globally also apply to Africa.

Because the risk of conflict in Africa can be explained well with the CH model, CH then present an overview of their model's predicted probability. The probability of conflict is calculated in two different ways. 'Predicted incidence at the mean of the variables' is calculated the following way. For each 'region' (global, sub-Saharan Africa and other developing regions), the sample's mean value for each region is multiplied with the coefficient. The sum of these products is then added to the regression constant. A 'Z' value for each region is then calculated into a probability for conflict using the formula P=Z/(1+Z). 'Predicted incidence, average of individual country predictions' is generated by letting STATA predict the probability of conflict based on each observation's in each region mean value.[23] CH's 'Table 3. Predicted Incidence of Civil War' is reported with some comments in my Table 10.

[23] These results are obtained after running the specific regression in STATA, and then ask STATA to 'predict phat' and 'sum phat' for the entire sample, and the two sub-samples Sub-Saharan Africa and Other Developing Regions.

Table 10. *Predicted Incidence of Civil War, Collier & Hoeffler (2002: 21, Table 3)*

	Coefficients (b)	Sample ($\bar{x}$ b)	Sub-Saharan Africa ($\bar{x}$ b)	Other Developing Regions ($\bar{x}$ b)
ln GDP per capita	–0.950	–7.864	–6.656*	–7.789
GDP growth $_{t-1}$	–0.098	–0.153	–0.046	–0.184
Prim. comm. exports	16.773	2.751	2.892	3.105
Prim. comm. exports ^{2}	–23.800	–0.640	–0.707	–0.815
Social fractionalization	–0.0002	*–0.447*	*–0.842*	*–0.293*
Ethnic dominance	0.480	0.227	0.192	0.261
Peace duration	–0.004	*–1.231*	*–1.185*	*–1.194*
ln population	0.510	8.718	**0.812**	**0.884**
Geographic dispersion	–0.992	–0.570	–0.550	–0.568
Constant	–3.438			
Predicted incidence at the mean of the variables		0.066	0.097	0.112
Predicted incidence, average of individual country predictions		0.069	0.095	0.077

Figures in italics, bold and * are misreported in CH's 'Table 3. Predicted Incidence of Civil War' (p. 21).
* In CH's Table 2 (p. 19) the reported mean GDP per capita for Sub-Saharan Africa is $2000. This is a typo. The dataset's mean value ($\bar{x}$) for income in Sub-Saharan Africa is $1,099. Nevertheless, CH have used ln $1,099 to generate $\bar{x}$ b (-6.656) in their Table 3.
Figures in italics: a different mean value was used than the ones presented in CH's Table 2: Descriptive Statistics (p. 19). Social fractionalization: Sample: CH report $\bar{x}$ = 1,784 in their descriptive table, but have used the figure 2,235 to generate the number in their Table 3. Sub-Saharan Africa: CH report $\bar{x}$ = 3,369 in their descriptive table, but have used 4,210 to generate the number in their Table 3. Other Developing Regions: CH report $\bar{x}$ = 1,171 in their descriptive table, but use 1,465 to generate the number in their Table 3. Peace duration: Sample: CH report $\bar{x}$ = 327 in their descriptive table, but use the figure 307.7 to generate the number in their Table 3. Sub-Saharan Africa: CH report $\bar{x}$ = 314 in their descriptive table, but use 296.25 to generate the number in their Table 3. Other Developing Regions: CH report $\bar{x}$ = 316.8 in their descriptive table, but use 298.5 to generate the number in their Table 3.
Figures in bold: The figures are typos. The decimal point should be moved one place to the right. The $\bar{x}$ b for Sub-Saharan Africa should be 8.12 and the $\bar{x}$ b for Other Developing Region should be 8.84. Compare with ln population for 'sample'.
By changing the figures mentioned above, recalculating the 'predicted incidence at the mean of the variables' produced only minor changes. The sample's 'predicted incidence at the mean of the variable for the sample is then 0.067, for Sub-Saharan Africa 0.105, and for Other Developing Regions 0.110.

Both types of prediction yield quite similar results. The largest difference between the two ways of predicting incidence (at mean value of variables or average of individual country predictions) is for 'other developing regions'. There, using the mean of variable predicts war in 11.2 percent of the country periods, while the risk is almost halved (7.7 percent) when using the individual country predictions.

However, the misreported numbers and an imprecise description of the calculation methods caused considerable worry. Firstly, I had a hard time figuring out how CH had calculated their means for GDP per capita and population.[24] These two vari-

[24] I thank Håvard Hegre for pointing out this possibility.

ables are logged in the dataset in order to reduce the influence of rich and populous countries. I therefore find it somewhat odd that instead of using the mean value of the variables included in the regression (namely logged GDP per capita and logged population), CH used the mean of GDP per capita in constant US dollars[25] and the mean value of population (in millions), and *then* logged them. These numbers (ln of the mean of GDP per capita and ln of mean for population) were used to generate the 'predicted incidence at mean of variables'. Using the mean of the variables in dollars and millions and then log-transforming them, creates a bias towards the high income and highly populated countries—the exact reason why these variables were log-transformed in the first place.

Secondly, I assumed that the mean values had been calculated on the basis of only the observations included in the regression (750 in CH and 709 in my dataset). However, after some effort I discovered that CH had based their mean values on the *entire* dataset. I would argue that it is more precise to use the mean values of the observations actually included in the regression since observations that are dropped from the regression due to missing data, might be systematically different from the ones included.

The discussion on using means logged or logged means, and mean from the entire dataset or from only the regression might seem like hair splitting, but each method produced somewhat different results. In the tables based on my dataset, I therefore include both methods: CH's way of using the mean of GDP per capita and population log transformed, and numbers based on dataset average, and my way using the mean value of log-transformed GDP per capita and log-transformed population, based on observations included in the regression. The results are presented in Table 11.

[25] However, in the description of the variables they state that 'we measure income as real purchasing power parity (PPP)-adjusted GDP per capita' (page 26). It is possible that the descriptive statistics table contain an error. If not, there is some confusion about which version of GDP per capita CH have used.

Table 11. *Replication of CH's Predicted Incidence of Civil War*

	Coefficient	Sample		Sub-Saharan Africa		Other Developing Regions	
		CH	MY	CH	MY	CH	MY
Ln GDP per capita	-0.929	-7.715	-7.772	-6.449	-6.293	-7.586	-7.310
GDP growth $_{t-1}$	-0.096	-0.135	-0.146	-0.016	-0.022	-0.163	-0.185
Prim. comm. exports	16.120	2.450	2.466	2.901	3.014	2.644	2.595
Prim. comm. exports ^{2}	-22.602	-0.522	-0.529	-0.732	-0.790	-0.608	-0.586
Social fractionalization	-0.0002	-0.362	-0.360	-0.726	-0.733	-0.228	-0.201
Ethnic dominance	0.501	0.231	0.208	0.186	0.182	-0.273	0.240
Peace duration	-0.004	-1.295	-1.379	-1.278	-1.312	-1.216	-1.303
ln population	0.485	8.374	7.692	7.767	7.410	8.532	7.842
Geographic dispersion	-1.084	-0.648	-0.661	-0.620	-0.614	-0.654	-0.687
Constant	-3.067						
Predicted incidence at the mean of the variables		0.064	0.048	0.116	0.098	0.112	0.065
Predicted incidence, average of individual country predictions		0.073		0.103		0.082	

In my replication, using the 'predicted incidence at mean of the variables' yielded both somewhat lower as well as higher incidence of civil war than using individual country prediction. Comparing the CH and my way of calculating 'predicted incidence at the mean of the variables' reveals quite considerable differences. Comparing the $\bar{x}\,b$ products indicates that the difference is produced mostly by the GDP per capita and population products. Most importantly, both CH and I find that predicted incidence of civil war is higher in Africa, both when compared to a global sample and to other developing countries.

While Collier & Hoeffler argue that 'mean of the variables' is 'merely a convenient simplification' (p. 21) this measurement is used to generate Table 6 (p. 25) in CH analysis. This table clearly illustrates CH's argument about conflict in Sub-Saharan Africa: if Sub-Saharan Africa performed better economically, the incidence of conflict would have been much lower.

Replicating CH Table 6 (p. 25) was a rather difficult exercise. CH are not clear about which regression they base their analysis on and how they proceed. Since they only present the figures for predicted incidence (and not the coefficient and mean values as they did their Tables 2 and 3), I was not able to replicate their exact find-

ings. In Table 12, I report CH own result in columns two and three, and the results based on my dataset in columns four to seven.

CH are ambiguous about the way they go about producing this table. In interpret them in the following way: I use the same regression coefficients as reported in Table 11. I sum the mean values for the 'regions' for 1970 and 1995, and calculate the xb products. I then generate the predicted incidence by summarizing the products for each region, and calculate a predicted incidence using P=Z/(1+Z). In order to calculated the value 'what if Africa had performed better', I interpret CH the following way: The increase in percent of GDP per capita from 1970 to 1995 for other developing regions (ODR) is used to calculated the 1995 figure for Sub-Saharan Africa (on the basis of the value SSA had in 1970). As for economic growth, SSA is given the same rate as ODR in 1995. As for primary commodity dependence, the rate of reduction from 1970 to 1995 for ODR is used to calculate SSA's value in 1995 (based on the figure for SSA in 1970). Following the same procedure as in Table 11, I calculate predicted incidence based both on CH's method and my method, as described above.

Table 12. *Predicted Incidence of Civil War: Changes over Time*

	Collier & Hoeffler		**Replication based on my dataset**			
			CH Method		**MY method**	
	Predicted Incidence. Calculated at the mean of the variables	Predicted Incidence. Assuming that Sub-Saharan Africa had experienced a better economic perform-ance	Predicted Incidence. Calculated at the mean of the variables	Predicted Incidence. Assuming that Sub-Saharan Africa had experienced a better eco-nomic per-formance	Predicted Incidence. Calculated at the mean of the variables	Predicted Incidence. Assuming that Sub-Saharan Africa had experienced a better economic perform-ance
1970						
Sub-Saharan Africa	0.088		0.109		0.094	
Other developing regions	0.145		0.133		0.081	
1995						
Sub-Saharan Africa	0.086	0.047	0.093	0.056	0.097	0.051*
Other developing regions	0.054		0.075		0.035	

* To calculate this figure, the growth increase for GDP per capita was calculated as the increase in the logged GDP per capita variable.

Despite the quibbling about procedures and methods for predicting incidence, the figures all show that the CH model predicts a lower incidence of conflict if Sub-Saharan African economies had performed better.

4.1.4 The Middle East and North Africa

Following the CH model for incidence of civil war in Sub-Saharan Africa, I use their model to investigate the Middle East and North Africa region: I start by adding a dummy variable for the region to the CH model. The results are shown in Table 12.

Table 13. *Accounting for Civil War 1960-99: The CH Model with a Middle East and North Africa Dummy*

	β	st.e.
ln GDP per capita	-0.990	(0.258)***
(GDP growth) $_{t-1}$	-0.092	(0.041)**
Prim. comm. exports	15.270	(5.248)**
Prim. comm. exports ^{2}	-21.461	(10.008)**
Social fractionalization	-0.0002	(0.0001)**
Ethnic dominance	0. 464	(0.330)
Peace duration	-0.004	(0.001)***
ln population	0.466	(0.132)***
Geographic dispersion	-1.129	(0.922)
Middle East Dummy	0.510	(0.516)
Constant	-2.363	(2.626)
N	709	
Pseudo R^2	0.22	
Log Likelihood	-145.56	
Number of wars included	52	

***, **, * indicate significance at the 1, 5 and 10 percent level, respectively.

Including a Middle East and North Africa dummy in the CH baseline model produced the same result as for the Africa dummies: it is not significant. There is no particular effect of either the Africa or the Middle East regions. For all models including regional dummies, the other explanatory variables display very similar coefficients. However, while the African dummies display negative terms (Sub-Saharan Africa: -0.370, French Colonized Africa: -0.933), the Middle East dummy yields a positive coefficient (0.510). For the observations included in the regression, the average value of war starts is slightly higher in the Middle East (11.5) than in sub-Saharan Africa (9.5), and much higher than French Colonized Africa (2.4). In order to check for the fact that the Middle East might be sensitive to a certain variable, I constructed interaction variables with the Middle East dummy and all the other variables. None of these were significant, and the CH model is therefore appropriate to use to analyze conflict in the Middle East.

Appendix 3 presents the descriptive statistics for the Middle East, the sample and other developing regions (ODR). Middle Eastern countries have enjoyed slightly higher levels of GDP per capita than the world average, and almost four times higher than Sub-Saharan Africa. As for economic growth, the Middle East region has been better off than sub-Saharan Africa, but more volatile than the global sample. Up until the mid-1980s the Middle East had equally high or even higher economic growth than the global sample. From 1985 the Middle East experienced two decades of decline and limited growth. In the 1995 period, however, the region experienced growth higher than the world sample. Table 13 illustrates the divergent economic growth patterns.

Table 14. *Economic Growth Rates Compared*

	WORLD			**MIDDLE EAST**			**AFRICA**		
	Mean	St.dev.	N	Mean	St.dev.	N	Mean	Std. Dev.	N
1960									
1965	2.58	3.09	103	4.47	2.96	11	0.59	3.77	31
1970	3.03	2.85	109	2.91	2.60	11	2.12	3.69	35
1975	2.54	3.62	120	5.18	2.41	13	1.39	4.53	40
1980	1.93	3.40	122	2.47	4.61	14	0.38	3.46	41
1985	-0.53	3.72	126	-2.08	6.25	17	-1.38	3.21	41
1990	0.47	3.13	121	-1.92	3.97	15	-0.46	2.31	38
1995	0.25	4.62	121	1.30	4.61	15	-1.24	3.34	37

Not surprisingly, the Middle East has higher levels of primary commodity dependence. Also, not surprisingly, when broken down into oil and mineral dependency, the Middle East countries have much higher dependence on oil, but a much lower dependence of minerals than the global average. The Middle East is a homogenous region, scoring much lower on fractionalization and somewhat higher on ethnic dominance, than the global as well as the ODC sample. However, both these variables treat Islam as one group, and the difference between Shia and Sunni Muslims are not accounted for—a source of much antagonism and conflict in the Muslim world. Here there is clearly room for data improvement. On the other hand, where does one draw the line? Should we start treating Protestantism, Catholicism and Orthodox Christianity separately? Where do the Anglicans belong? What about Buddhist and Hindi sects?

There is little difference the geographic dispersion averages, and the Middle East region scores somewhat lower on the peace variable (307 vs. 344), indicating a higher propensity for conflict in the MENA region. Following the CH analysis, Table 14 presents the two types of predicted incidence of civil war for the Middle East.

Table 15. *Predicted Incidence of Civil War in the Middle East*

	Coefficient	Sample		Middle East and North Africa	
		CH	MY	CH	MY
Ln GDP per capita	-0.929	-7.715	-7.772	-6.449	-6.293
GDP growth $_{t-1}$	-0.096	-0.135	-0.146	-0.016	-0.022
Prim. comm.. exports	16.120	2.450	2.466	2.901	3.014
Prim. comm.. exports ^{2}	-22.602	-0.522	-0.529	-0.732	-0.790
Social fractionalization	-0.0002	-0.362	-0.360	-0.726	-0.733
Ethnic dominance	0.501	0.231	0.208	0.186	0.182
Peace duration	-0.004	-1.295	-1.379	-1.278	-1.312
ln population	0.485	8.374	7.692	7.767	7.410
Geographic dispersion	-1.084	-0.648	-0.661	-0.620	-0.614
Constant	-3.067				
Predicted incidence at the mean of the variables		0.064	0.048	0.116	0.098
Predicted incidence, average of individual country predictions		0.073		0.092	

As for the same table on Africa, the predicted incidence when using the mean of the variables in CH's way yields higher risk for conflict, than when using my procedure. The main difference is again found for the $\bar{x}\,b$ for GDP per capita and population. When using the individual country predictions, the results are mixed. In sum however, all three types of predictions are higher for the Middle East and Africa than the sample average, and around the same level as Sub-Saharan Africa.

4.1.5 Africa and the Middle East Compared

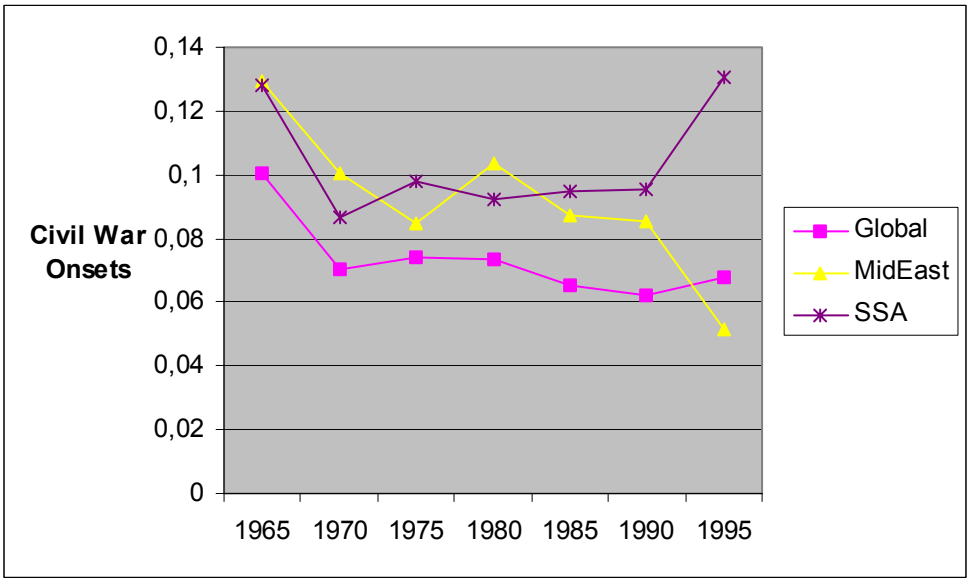
The procedure for generating 'predicted incidence at the mean of the variables' is rather complicated. When comparing regions and trends over time, I only include the actual observed starts of war and 'predicted incidence, average of individual country predictions.' These values for global sample, Sub-Saharan Africa, and the Middle East and North Africa are summarized in Table 15. The model predicts slightly higher values for Sub-Saharan Africa, and slightly lower values for the Middle East.

Figure 6 presents the conflict trends over time for the global sample, Sub-Saharan Africa and the Middle East and North Africa.

Table 16. *Comparison of Observed and Predicted Probability of Civil War*

	M	SD	Min	Max	N
Sample					
War starts (observed)	0.073	0.261	0	1	709
Predicted incidence. Average of individual country predictions (sum phat)	0.073	0.101	0.00001	0.760	709
Sub-Saharan Africa					
War starts (observed)	0.096	0.296	0	1	239
Predicted incidence. Average of individual country predictions (sum phat)	0.103	0.118	0.0027	0.760	239
Middle East and North Africa					
War starts (observed)	0.115	0.322	0	1	78
Predicted incidence. Average of individual country predictions (sum phat)	0.092	0.113	0.00001	0.509	78

Figure 5. *Predicted Incidence of Civil War Over Time*



A very different picture of the conflict trends in the two regions emerges in Figure 5. Both regions are more conflict-prone than the global average, but the model predicts quite divergent trend for two regions. While the two regions' predicted risk for conflict is relatively equal in the period from 1965 to 1985, this changes radically in the last period. From 1990 to 1995, the CH model predicts a sharp rise in conflict in Sub-Saharan Africa and a significant decline in the Middle East and North Africa.

4.2 The CH Model in a Country-year Dataset

The five-year period design used by CH is seldom used in quantitative studies of civil war. A much more common design is a country-year structure. I therefore now move on to apply the CH model on a country-year dataset. This section is broken into two parts. The first runs the CH model on an annualized dataset with *civil war onset* as the dependent variable. While CH use COW data as their dependent variable, I use civil war as defined by the PRIO/Uppsala dataset (Gleditsch et al., 2002). Their definition of civil war matches COW's requirement of a threshold for 1,000 battle-deaths per year, and the correlation between COW and PRIO/Uppsala's civil war coding is high (Gleditsch et al., 2001: 17).

The second part uses *armed civil conflict onset* in the PRIO/Uppsala dataset as the dependent variable, and applies the CH model to armed civil conflicts with a threshold of 25 battle-related deaths per year. The PRIO/Uppsala dataset includes 80 civil war onsets and 157 armed civil conflict onsets in the period 1960 to 1997, the temporal domain covered by the analyses in this thesis (See Appendix 7 for details).

In the tables, I report more detailed results than CH. In particular, I include the odds ratio measure in the table. The odds ratio measurement tells us how much the odds for civil war increases or decreases when an independent variable increases with one unit (and all other independent variables are kept constant at mean value). Odd ratios are transferred into probabilities with the simple equation: $OR = P/(1-P) = e^{z}$. Coefficients significant at the 0.05 level are highlighted in bold. Coefficients significant at the 0.10 level are marked in bold and italics.

4.2.1 Accounting for Civil War with PRIO/Uppsala Conflict Data

The original CH dataset was developed into an annualized dataset by either gathering new variables in an annual form or copying variables from the CH dataset (see Chapter 3). Variables marked with (c) are copied values. These were generated based on the original CH variables because they were hard to obtain in an annualized form (especially geographic dispersion and primary commodity dependence). I could not obtain data on population after 1997, and the analyses from here on are therefore only

covering the period 1960-97. Table 16 presents the CH model on an annualized dataset.

Table 17. *Accounting for Civil War 1960-97: The CH Model with PRIO/Uppsala Data*

	β	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.263	0.127	**0.039**	0.769
GDP growth	-3.690	1.751	**0.035**	0.025
Prim. comm.. exports (c)	15.487	4.723	**0.001**	5.320.803
Prim. comm.. exports^2 (c)	-27.970	10.626	**0.008**	7.13e-13
Social fractionalization (c)	-0.0001	0.0001	0.500	1.000
Ethnic dominance (c)	0.849	0.296	**0.004**	2.337
Peace years	-0.027	0.011	**0.015**	0.973
ln population	0.605	0.112	**0.000**	1.832
Geographic dispersion (c)	0.335	0.871	0.700	1.398
Constant	-13.507	2.343	0.000	
N	3892			
Pseudo R^2	0.119			
Log Likelihood	-258.351			
Number of conflict onsets included	56			
Sample average conflict onsets	0.014			

Running the CH model on a country-year annual dataset produced some interesting differences with the five-year-period design format. Geographic dispersion continues to be insignificant in terms of p, but is now also insignificant in terms of improving the model's log likelihood. Furthermore, geographic dispersion is now positive, as opposed to negative in the five-year period design. CH argued that conflict is more likely to take place when the population is dispersed because it is harder for the government to control remote part (as in Zaire). According to my results, a positive geographic dispersion coefficient indicates that conflict is more like to take place in countries where the population is concentrated in one area. Removing geographic dispersion from the model adds around 200 observations, but changes the results minimally, and I therefore leave it in to ease comparability with the original CH model.

Most notably, social fractionalization is no longer significant, while ethnic dominance is. While fractionalization is still negative, it is no longer significant, and weakens CH's argument about fractionalization hindering mobilization and consequently impeding rebel organization and cohesion. In this regression, ethnic domi-

nance emerges as significant, giving some support to the grievance perspective. This is in line with the finding of Gurr (1993) that a dominant ethnic group that represses and exploits a large minority is conducive to conflict. A further testing of the importance of political variables is presented in the next table. Here regime type (as measured by Polyarchy) is added to the CH model. Social fractionalization and geographical dispersion are insignificant (in terms of both p or log likelihood). In order to ease comparability with the original CH model, these variables were kept in the model.

Table 18. *Accounting for Civil War 1960-97: The CH Model with PRIO/Uppsala Data, Regime Added*

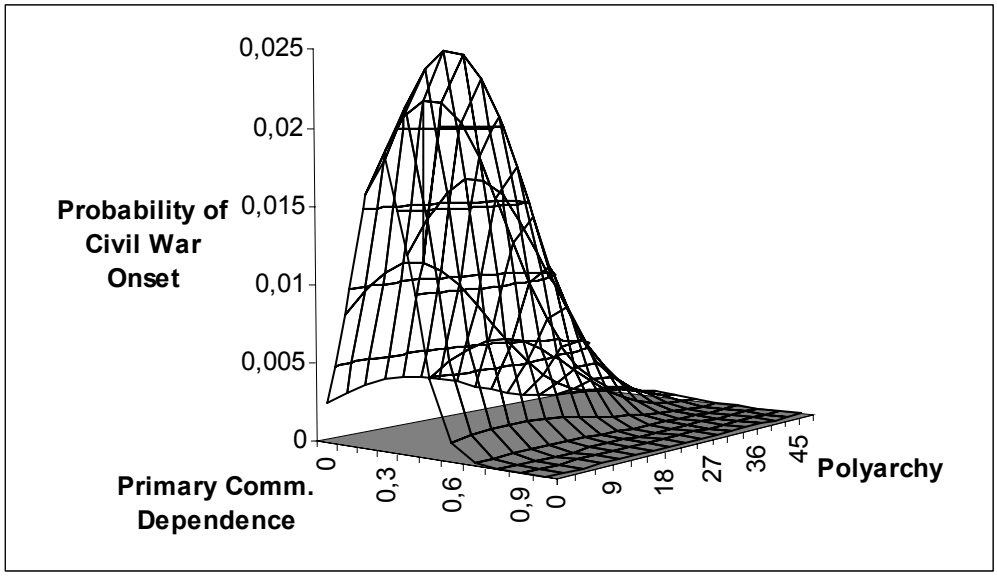
	β	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.168	0.153	0.272	0.845
GDP growth	-3.611	1.762	**0.040**	0.027
Prim. comm. exports (c)	14.203	4.692	**0.002**	1,473,299
Prim. comm. exports^2 (c)	-25.787	10.385	**0.013**	6.32e-12
Social fractionalization (c)	-0.00004	0.0001	0.602	1.000
Ethnic dominance (c)	0.840	0.300	**0.005**	2.316
Peace years	-0.027	0.011	**0.017**	0.974
ln population	0.601	0.113	**0.000**	1.824
Geographic dispersion (c)	0.293	0.899	0.745	1.340
Polyarchy	0.061	0.045	0.178	1.063
Polyarchy^2	-0.003	0.002	0.120	0.997
Constant	-13.998	2.393	0.000	
N	3881			
Pseudo R^2	0.125			
Log Likelihood	-252.688			
Number of conflict onsets included	55			
Sample average conflict onsets	0.014			

When adding regime type to the model, GDP per capita is no longer significant. This is most likely due to the variable's high correlation with Polyarchy (0.7). Democracy and economic development *are* closely connected, and using different measurements (both for regime and economic development) did not yield much lower correlations. I replaced the GDP per capita and Polyarchy variables with an interaction term between GDP per capita and Polyarchy squared. The interaction term was statistically significant (0.048) and the coefficient negative, indicating that both economic development and autocracies/democracies reduce the probability for conflict. Adding the odds ratio measurement reveals that primary commodity exports yield terrible odds for civil war. Economic development and growth; peace, population

size, primary commodity exports are show the same results as in CH analysis, while ethnic dominance again is significant.

Corresponding with CH's findings, regime is not significant at the five percent level. However, the squared term is borderline significant, and I investigate the relationship between regime type, conflict and primary commodity by graphing them in a three-dimensional graph (see Figure 6).

Figure 6. *Civil War Onset, Primary Commodity Dependence and Regime Type*



* Figure 7 is generated on the basis of Table 18

The graph visualizes the complex relationship, and verifies an inverted U-shaped relationship for both regime type and primary commodity dependence. The curvilinear relationship for regime type is repeated for all levels of primary commodity, except at the extremely high levels. However, very few countries are in this range. Only 70 observations in this sample have a score of more than 0.6 on the primary commodity variable. The curve peaks at 0.3 for primary commodity dependence. Interestingly, at medium levels of primary commodity, the Polyarchy curve peaks at a score of around 9, implying that fewer democracies experience civil war. Countries around the peak area have almost 80 percent higher probability for conflict than the sample average (2.5 vs. 1.4 percent). For lower and higher levels of primary commodity dependence, the curve for regime type still persists, but is less pronounced.

I then move on to break down primary commodity exports into oil and mineral dependency. Due to missing data, the model containing oil and mineral dependency looses 11 conflict onsets and almost 1,300 observations compared to the model with the primary commodity dependence.

Table 19. *Accounting for Civil War 1960-97: The CH Model with PRIO/Uppsala Data, Oil and Mineral Dependency Added*

	β	St.e.	p-value	Odds Ratio
ln GDP per capita	-0.504	0.163	**0.002**	0.604
GDP growth	-4.933	2.856	***0.084***	0.007
Oil dependency	5.509	3.597	0.126	246.909
Oil dependency^2	-8.111	7.126	0.255	0.0003
Mineral dependency	35.732	32.620	0.273	3.30e+15
Mineral dependency^2	-616.190	593.630	0.299	2.47e-268
Social fractionalization (c)	-0.0001	0.0001	0.540	1.000
Ethnic dominance (c)	0.657	0.347	**0.059**	1.929
Peace years	-0.030	0.014	**0.027**	0.971
ln population	0.422	0.108	**0.000**	1.524
Geographic dispersion (c)	0.640	1.053	0.543	1.896
Constant	-7.574	2.424	0.002	
N	2600			
Pseudo R^2	0.145			
Log Likelihood	-190.735			
Number of conflict onsets included	44			
Sample average conflict onsets	0.017			

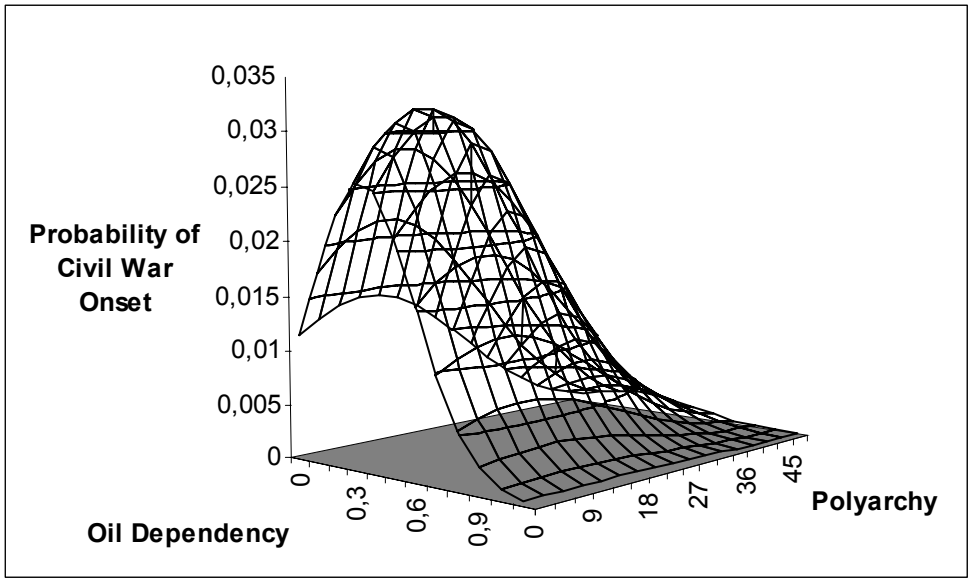
In this model, oil and mineral dependence are not significant, neither in terms of p or log likelihood improvement. However, the positive linear term and the negative squared term indicate a curvilinear relationship. I also tried to add regime type to the model with oil and mineral dependence but found rather weak results (Table 20).

Table 20. *Accounting for Civil War 1960-97: The CH Model with PRIO/Uppsala Data, Regime Type, Oil and Mineral Dependency Added*

	β	St.e.	p-value	Odds Ratio
ln GDP per capita	-0.381	0.196	**0.052**	0.683
GDP growth	-4.916	2.831	***0.082***	0.007
Oil dependency	4.796	3.633	0.187	120.981
Oil dependency^2	-7.189	6.930	0.300	0.001
Mineral dependency	30.930	32.738	0.345	2.71e+13
Mineral dependency^2	-563.775	592.187	0.341	1.43e-245
Social fractionalization (c)	-0.00003	0.0001	0.734	1.000
Ethnic dominance (c)	0.688	0.350	**0.049**	1.991
Peace years	-0.029	0.014	**0.034**	0.972
ln population	0.429	0.114	**0.000**	1.535
Geographic dispersion (c)	0.504	1.072	0.639	1.655
Polyarchy	0.042	0.052	0.426	1.043
Polyarchy^2	-0.002	0.002	0.286	0.998
Constant	-8.470	6.637	0.001	
N	2600			
Pseudo R^2	0.149			
Log Likelihood	-189.929			
Number of conflict onsets included	44			
Sample average conflict onsets	0.017			

Keeping the other variables at mean value (for observations in the regression), I graph the relationship between oil dependence and regime type in Figure 7.

Figure 7. *Civil War Onset, Oil Dependence and Regime Type*



* Figure 7 is generated on the basis of Table 20

As for primary commodity exports, regime and civil war, the same curvilinear relationship between oil dependence, regime type and civil war is confirmed here. For countries with medium levels of both oil dependence and democracy, the risk of conflict is more than the double of the sample average (3.2 percent compared to 1.7).

For the models with primary commodity dependence, oil and mineral dependence, both without and with regime type, I added regional dummies with all the regression, but found no significant results. A discussion of regions is provided after the analysis of armed civil conflicts.

4.2.2 Accounting for Armed Conflict with PRIO/Uppsala Conflict Data

The last part of the analysis runs the CH model with a dependent variable with a lower threshold for conflict. Instead of the 1,000 battle-related deaths required in the COW dataset and by the PRIO/Uppsala 'civil war' definition, I use the PRIO/Uppsala dataset's definition of 'armed civil conflict' (25 battle-related deaths per year). The variables primary commodities, social fractionalization, ethnic dominance and geographic dispersion were copied from the five-year-period dataset. Data on GDP per capita, economic growth, population, regime type, oil and mineral dependence are in an annual format.

Table 21. *Accounting for Armed Conflict 1960-97: The CH Model with PRIO/Uppsala Data*

	β	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.368	0.088	**0.000**	0.692
GDP growth	-4.252	1.401	**0.002**	0.014
Prim. comm. exports (c)	1.756	2.111	0.406	5.788
Prim. comm. exports ^{2} (c)	-0.592	3.271	0.856	0.553
Social fractionalization	0.00002	0.0001	0.683	1.000
Ethnic dominance	0.424	0.200	**0.034**	1.529
Peace duration	-0.019	0.008	**0.022**	0.981
ln population	0.373	0.070	**0.000**	1.452
Geographic dispersion (c)	0.795	0.585	0.174	2.214
Constant	-7.417	1.449	0.000	
N	3502			
Pseudo R^2	0.102			
Log Likelihood	-460.558			
Number of conflict onsets included	117			
Sample average conflict onsets	0.033			

As before, high levels of economic development and growth, and longer periods with peace decrease the likelihood for conflict. Interestingly, social fractionalization continues to be insignificant in an annualized format, but is now positive. Also as opposed to the CH finding (but in line with the findings on civil war in my annual dataset), ethnic dominance is significant at the 10 percent level. These results contrast CH's argument about cohesion and mobilization. A high score on 'social fractionalization' implies a large number of ethnic, linguistic and religious groups within the country. According to CH, fractionalization should impede mobilization to conflict, and consequently displays a negative relationship. This is not supported by my findings. Rather, the presence of a dominant ethnic group and possible political exclusion of a large minority by a majority both yields higher probability for conflict. This is the line with Hegre et al. who find a weak correlation between fragmentation and civil war (Hegre et al., 2001), while Ellingsen finds that 'multiethnicity has a quite strong and significant impact on domestic conflict' (2000: 17). However, both Hegre and Ellingsen also found that political and socioeconomic factors are more important in predicting conflict: political and economic factors influence the centrality of ethnic identities; play a major role in the possibility for conflict-mobilization, and affects whether conflict escalates to a violent level.

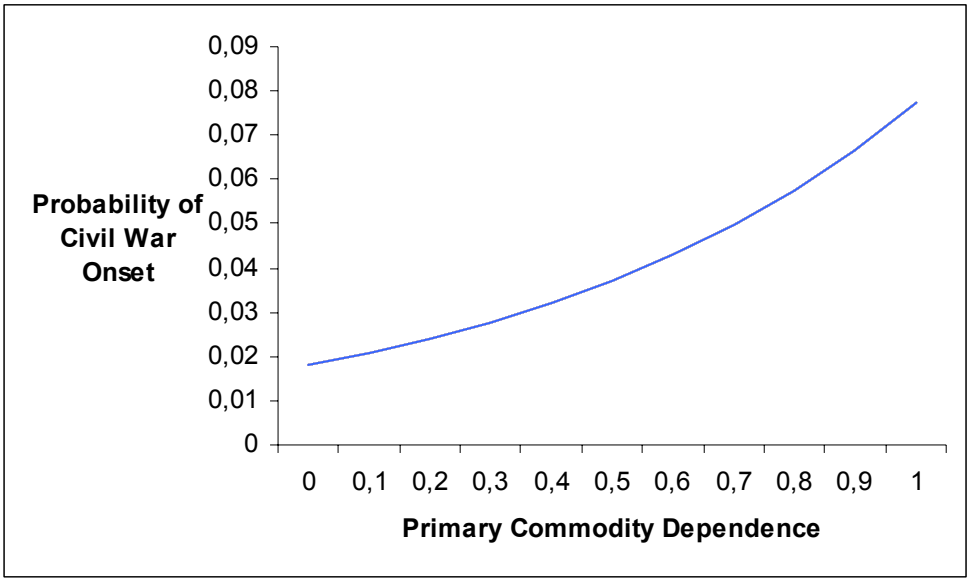
Rather surprisingly, primary commodity exports are no longer significant. This contradicts CH's and my earlier findings. Why shouldn't primary commodity exports be relevant in an analysis of armed civil conflict, when it repeatedly has been significant on conflicts with a higher level of battle-related deaths? The difference between small and large civil conflicts is their intensity. Could it be that less intensive conflicts display a linear relationship with primary commodity exports? If the conflicts surpass 1,000 battle-related deaths, could it be that the stakes (read: access to natural resource) are so important that the government would be involved in the extraction of natural resources, and consequently would quell down 'large' rebellions? I test this by leaving the exponential primary commodity export term out of the model.

Table 22. *Accounting for Armed Civil Conflict: The CH Model with Linear Primary Commodity*

	β	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.369	0.087	**0.000**	0.692
GDP growth	-4.246	1.401	**0.002**	0.014
Prim. comm. exports (c)	1.400	0.798	***0.079***	4.055
Social fractionalization (c)	0.00002	0.0001	0.648	1.000
Ethnic dominance	0.421	0.199	**0.034**	1.523
Peace duration	-0.019	0.008	**0.023**	0.981
ln population	0.370	0.067	**0.000**	1.447
Geographic dispersion (c)	0.805	0.582	0.166	2.238
Constant	-7.332	1.371	0.000	
N	3502			
Pseudo R^2	0.102			
Log Likelihood	-460.575			
Number of conflict onsets included	117			
Sample average conflict onsets	0.033			

Rerunning the model shows that primary commodity exports at least is more significant here, although only at the ten percent level. Again, the other variables are almost unchanged by from the previous model. The relationship between armed civil conflict and primary commodity dependence is graphed below:

Figure 8. *Armed Civil Conflict and Primary Commodity Dependence*



* Figure 8 is generated on the basis of Table 22

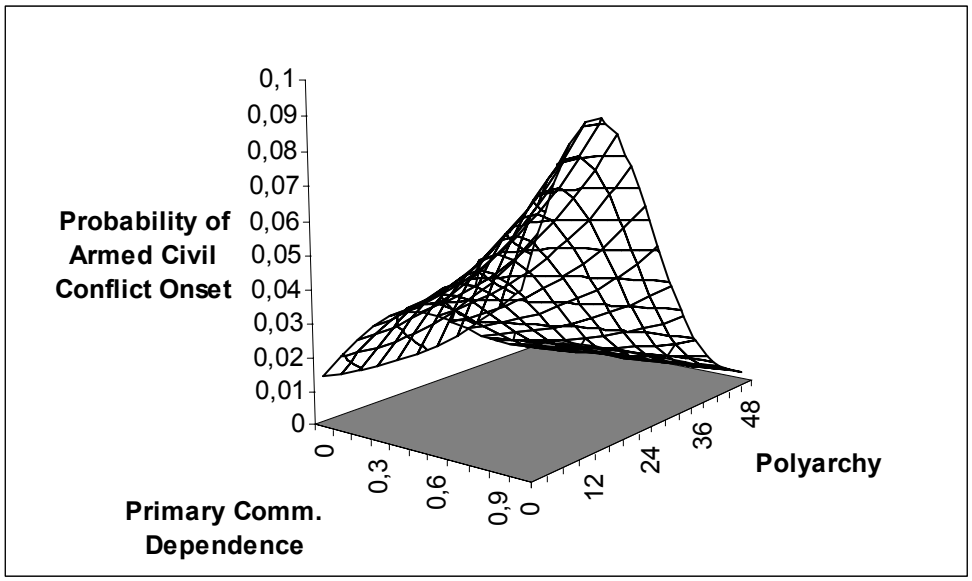
The linear positive relationship reveals a tripling of the conflict probability for a country with low dependence compared with a country with high dependence. To this

model, I now add regime type. The results and the graph based on the results in Table 22 are presented below.

Table 23. *Accounting for Armed Conflict 1960-97: The CH Model with PRIO/Uppsala Data, Regime Type Added*

	β	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.360	0.108	**0.001**	0.698
GDP growth	-4.431	1.425	**0.002**	0.012
Prim. comm. exports (c)	1.157	0.839	0.168	3.182
Social fractionalization (c)	0.00003	0.0001	0.619	1.000
Ethnic dominance (c)	0.401	0.200	**0.045**	1.494
Peace years	-0.018	0.008	**0.037**	0.982
ln population	0.370	0.068	**0.000**	1.448
Geographic dispersion (c)	0.847	0.603	0.160	2.334
Polyarchy	0.081	0.030	**0.007**	1.084
Polyarchy^2	-0.003	0.001	**0.019**	0.997
Constant	-7.594	1.429	0.000	
N	3495			
Pseudo R^2	0.110			
Log Likelihood	-452.908			
Number of conflict onsets included	116			
Sample average conflict onsets	0.033			

Figure 9. *Armed Civil Conflict, Primary Commodity Dependence and Regime Type*



* Figure 9 is generated in the basis of Table 23

Interestingly, regime type is significant at the five percent level. The other coefficients remain almost the same, while primary commodity dependence is no longer

significant. The graph reveals that semi-democracies are the most conflict prone—for all levels of primary commodity dependence. Again, a variable measuring regime transition was added to the model, but was not significant, and therefore dropped from the model. It is interesting to note that the graph is tilting towards the democratic end of the Polyarchy score, indicating that a lower risk for conflict within democracies.

I then move on to an analysis containing more specified measurements for natural resources. The hypothesis on oil and mineral dependence and conflict were not supported in the five-year analysis, and were not significant in the annualized analysis of civil war. The results for the annualized analysis of armed civil conflict are presented below.

Table 24. *Accounting for Armed Conflict 1960-97: The CH Model with PRIO/Uppsala with Oil and Mineral Dependency*

	β	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.441	0.112	**0.000**	0.644
GDP growth	-6.408	2.281	**0.005**	0.002
Oil dependency	3.762	3.302	0.255	43.056
Oil dependency^2	-8.086	7.065	0.252	0.0003
Mineral dependency	2.387	7.612	0.754	10.884
Mineral dependency^2	-9.086	31.038	0.770	0.0001
Social fractionalization (c)	-0.00003	0.0001	0.692	1.000
Ethnic dominance (c)	0.412	0.250	***0.099***	1.511
Peace years	-0.014	0.011	0.184	0.986
ln population	0.450	0.085	**0.000**	1.568
Geographic dispersion ()	-0.009	0.750	0.990	0.991
Constant	-7.369	1.790	0.000	
N	2314			
Pseudo R^2	0.123			
Log Likelihood	-299.203			
Number of conflict onsets included	78			
Sample average conflict onsets	0.034			

Unfortunately, including the variables for oil and mineral dependency produces a loss of 38 armed civil conflict onsets and almost 1,200 observations in the regression. Missing data is one serious problem that is the burden of quantitative studies, and one that is hard to accommodate.

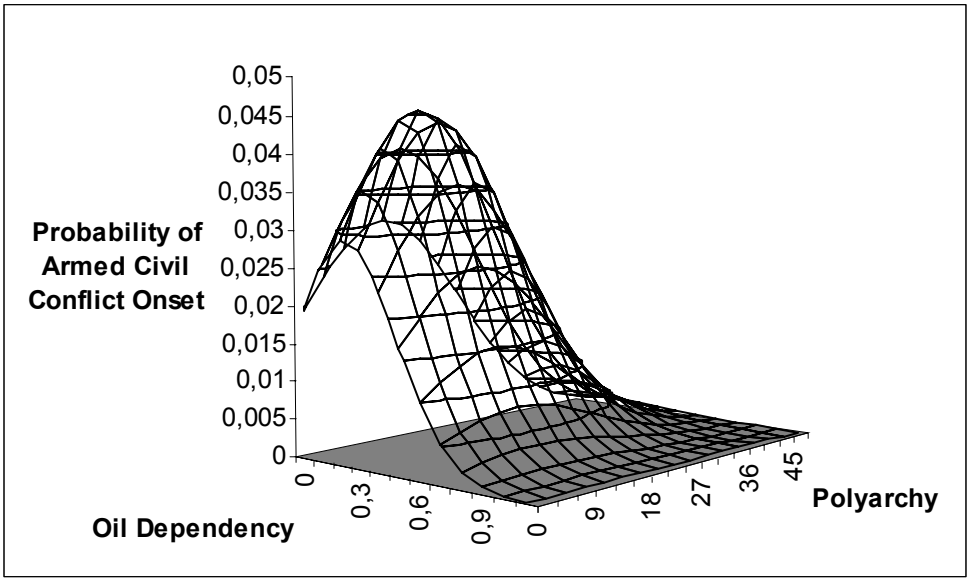
Table 25. *Accounting for Armed Conflict 1960-97: The CH Model with PRIO/Uppsala Data, Regime, Oil and Mineral Dependency Added*

	B	st.e.	p-value	Odds Ratio
ln GDP per capita	-0.370	0.142	**0.009**	0.691
GDP growth	-6.348	2.302	**0.006**	0.002
Oil dependency	3.484	3.257	0.285	32.601
Oil dependency^2	-7.683	6.701	0.252	0.0004
Mineral dependency	1.859	7.614	0.807	6.420
Mineral dependency^2	-7.853	30.303	0.796	0.0004
Social fractionalization (c)	-6.94e-06	0.0001	0.919	1.000
Ethnic dominance (c)	0.418	0.249	***0.093***	1.519
Peace years	-0.013	0.011	0.213	0.987
ln population	0.442	0.087	**0.000**	1.556
Geographic dispersion (c)	-0.006	0.774	0.994	0.994
Polyarchy	0.072	0.035	**0.040**	1.075
Polyarchy^2	-0.003	0.001	**0.042**	0.997
Constant	-7.892	1.920	0.000	
N	2314			
Pseudo R^2	0.130			
Log Likelihood	-296.712			
Number of conflicts included	78			
Sample average conflict onsets	0.034			

In this regression, peace years drop out of the significant list. Oil and mineral dependency follow the hypothesized shape of their relationship with conflict. However, the variables are not significant. A possible reason for the lack of significance, is that few countries are on the upper level of the dependency scale.

Although the oil dependency variables are not significant, I graph this below to inspect the relationship. Figure 10 displays the hypothesized relationship for both regime type and oil dependence.

Figure 10. *The Effect of Regime Type and Oil Dependency on the Probability of Armed Civil Conflict*



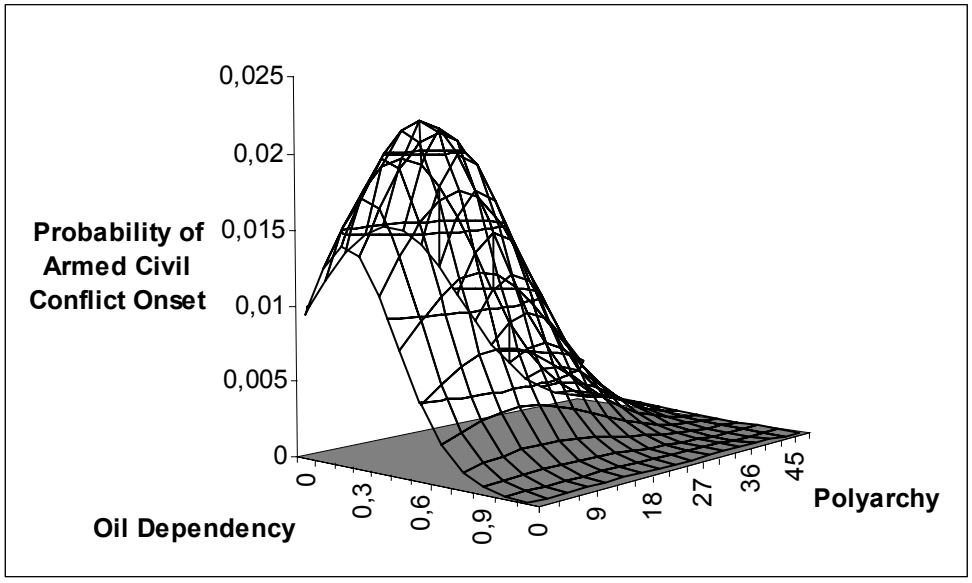
‘ Figure 10 is generated on the basis of Table 25

The three-dimensional model displays a clear curvilinear relationship between regime type and conflict. The relationship between oil dependency and conflict is also curvilinear, although it peaks around 0.3 percent of exports. For high levels of oil dependency, the probability for conflict is very small! However, very few observations are found for high levels of oil dependence. This finding strengthens the hypotheses on regime and oil dependency, and is in line with rentier theory. Nevertheless, oil and regime type are strong explanatory variables. In the sample, the average conflict onset is 3.3 percent. Only a few observations are found in the area above that level. The figure’s maximum conflict onset level is 4.6 percent.[26] The peak of the curves for oil dependency and regime is around the double of the average sample probability at 3.3 percent for the sample with oil and mineral dependency, and when all the other independent variables are held at mean value. Oil and mineral dependency explain little. Economic development and economic growth are much stronger variables. The two next figures exemplify. Rich countries have a much lower prob-

[26] For mineral dependency, the relationship displays a curvilinear U-shaped relationship. However, as the lack of significance in terms of both p-values and improvement in log likelihood scores, and graphing the model reveal that mineral dependency explain little of the causes for armed civil conflict.

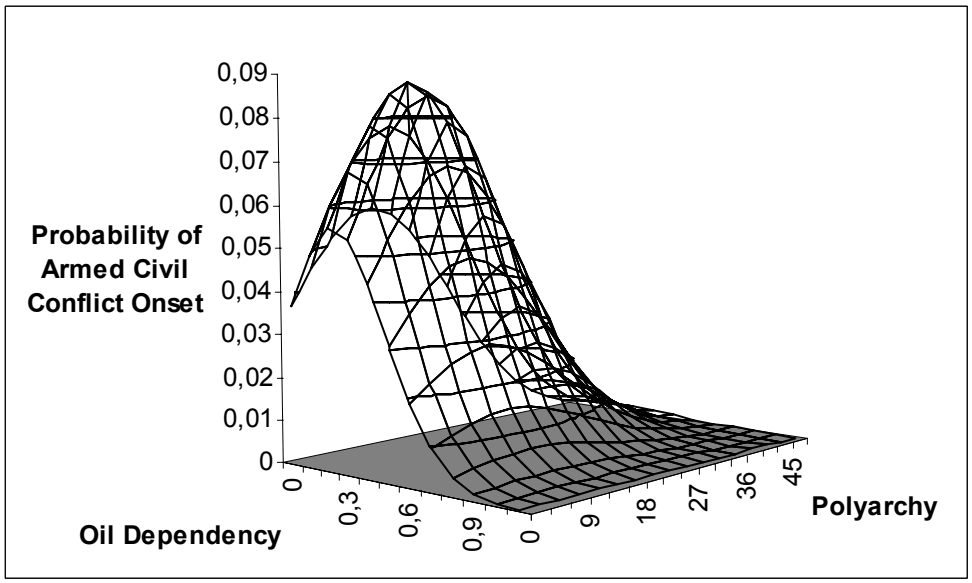
ability for conflict than poor countries.[27] Whereas rich countries have a maximum conflict probability of around 1.5 percent, poor countries have an almost six time higher risk: 8.8 percent.

Figure 11. *Armed Civil Conflict, Oil Dependency and Regime Type, Rich Countries*



* Figure 11 is generated on the basis of Table 25

Figure 12. *Armed Civil Conflict, Oil Dependency and Regime Type, Poor Countries*



* Figure 12 is generated on the basis of Table 25

[27] 75 percentile: GDP per capita 9.205, economic growth 0.045 percent. 25 percentile: GDP per capita 6.475, economic growth –0.004 percent.

In order to further investigate the relationship between oil, economic development and regime type, I constructed several interaction variables between oil dependence and regime type as well as oil dependence and GDP per capita. These were all negative, but not significant at even the 0.10 level. Both the interaction between oil dependence and the linear and squared regime type variable was negative. This indicates that a high level of oil dependence reduces conflict, both for democratic and authoritarian regimes. The interaction terms between GDP per capita and oil dependence (linear and squared) were also negative, indicating that having little or a lot of oil reduces the risk of conflict. Finally, I investigated the possibility that it might be better to treat oil dependence in the form of a dummy variable. Assuming that the effect of being dependent on oil 'kicks in' at a high level. This is what de Soysa (2002) found in his study covering the period 1989-99. In my analysis, all countries where oil constituted more than 40 percent of total exports were given the value 1. In this way, I could include oil dependence in the same model as primary commodity dependence. In my analysis the oil dummy was negative, in contrast to de Soysa's finding. The major difference between these findings is probably attributed to the period of analysis. It is possible that countries that have been oil dependent for a while have learned to do other things. This is probably the case for many of the Gulf countries, but not the case for Venezuela, Nigeria and Indonesia.[28]

4.2.3 Regional Differences

Following CH's design, I added a dummy variable for both the Sub-Saharan Africa and the Middle East North Africa regions in all the regressions reported. None of the regional dummies were significant in any of the regressions, which was also the case with the Africa dummy in CH's analysis. The model on the five-year period dataset predicted a slightly higher conflict risk for Sub-Saharan Africa than for the Middle East, while the observed values were the other way around (see Table 15). Using the CH model to calculate the incidence of civil war over time showed predicted an increase in the risk for conflict in Sub-Saharan Africa, and a reduction in the risk of the

[28] Thanks to Indra de Soysa for discussing these issues per e-mail.

Middle East region (Figure 6). Since my analysis on the annualized dataset contains so many different regressions, I do not examine the two types of predicted incidence that were discussed in sections 4.1.3. and 4.1.4. The regional differences are rather compared by generating time-trend figures and by comparing the actual conflict outbreak with the 'predicted incidence, average of individual conflict predictions'. Figures 13 and 14 present the time trend for civil war and armed civil conflict.

Figure 13. *Civil War Time Trend*

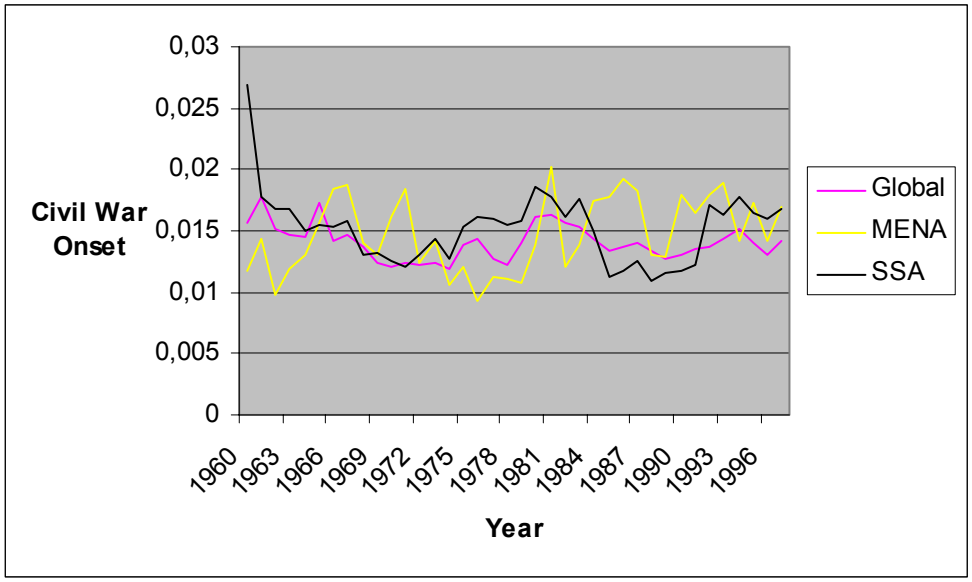
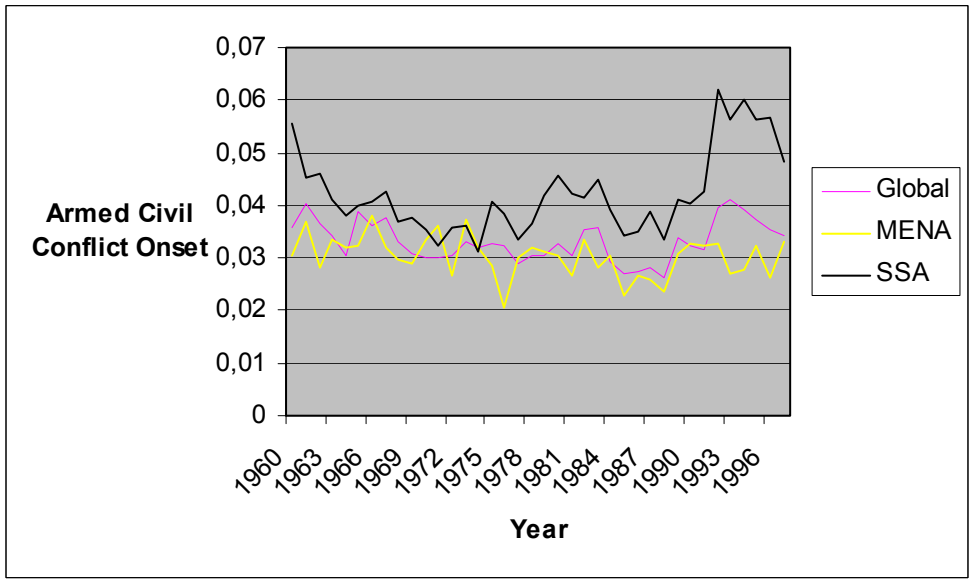


Figure 14. *Armed Civil Conflict Time Trend*



For civil wars, both Africa and the Middle East are generally above the global average. In contrast to what Figure 6 showed for the five-year period design, the time trend based on the annualized design and the PRIO/Uppsala conflict data indicates a less drastic increase in conflicts in Africa in the 1990s. The figure on civil war does not paint a clear picture of whether Africa or the Middle East is more prone to conflict. The predicted incidence of civil war varies from around 1.0 percent to 2.7 percent.

For armed civil conflicts, the difference between the predicted incidences for the two regions is more pronounced, with Africa notably above the Middle East. For Africa the model predicts a sharp increase from 1991 to 1992, and a continued high risk that only has gone down slightly from 1996 to 1997. The model predicts a substantial higher risk for armed civil conflict in Africa in almost all years. The predicted incidence of armed civil conflict spans from 2.0 percent to 6.1 percent.

I further examine the regional differences between Sub-Saharan Africa and the Middle East and North Africa by comparing the dataset's actual observed conflict onsets with the model's predicted probability of conflict for the sample and the two regions. The results are presented in Table 26.

Table 26. *Comparison of Observed and Predicted Probability of Civil War and Armed Civil Conflict*

	M	SD	Min	Max	N
Civil War*					
Sample					
Conflict onsets (observed)	0.014	0.118	0	1	3,881
Predicted incidence. Average of individual country predictions (sum phat)	0.014	0.019	0.000	0.329	3,881
Sub-Saharan Africa					
Conflict onsets (observed)	0.014	0.118	0	1	1,203
Predicted incidence. Average of individual country predictions (sum phat)	0.014	0.016	0.003	0.162	1,203
Middle East and North Africa					
Conflict onsets (observed)	0.019	0.136	0	1	428
Predicted incidence. Average of individual country predictions (sum phat)	0.017	0.021	0.000	0.104	428
Armed Civil Conflict*					
Sample					
Conflict onsets (observed)	0.033	0.179	0	1	3,495
Predicted incidence. Average of individual country predictions (sum phat)	0.033	0.038	0.000	0.691	3,495
Sub-Saharan Africa					
Conflict onsets (observed)	0.041	0.198	0	1	1,127
Predicted incidence. Average of individual country predictions (sum phat)	0.043	0.033	0.002	0.297	1,127
Middle East and North Africa					
Conflict onsets (observed)	0.044	0.205	0	1	342
Predicted incidence. Average of individual country predictions (sum phat)	0.030	0.020	0.001	0.103	342

* The regression in Table 18 is the basis for these values
** The regression in Table 23 the basis for these values

Comparing the actual onset and the CH model's predicted incidence of conflict in Sub-Saharan Africa and the Middle East and North Africa is a useful exercise. For civil wars, the Middle East region's observed and predicted civil war incidence is slightly higher than Africa. The actual and predicted incidences are the same for Africa.

For armed civil conflict the picture is more diverse. For Africa the predicted incidence and the actual onset are close, with the CH model predicting a slightly higher value. For the Middle East, the difference between observed conflict onset and predicted value is rather large. While observed conflict is 4.4 percent, the predicted incidence is around 40 percent lower at 3.0 percent. This pattern was also found in the comparison of observed and predicted probability of civil war in the five-year period: war starts in the Middle East is higher than for Africa, while the CH model predicts a

higher incidence for Africa than in the Middle East. Does CH's model then 'favor' variables that explain conflict in Africa, and 'overlook' variables that are of importance to conflict in the Middle East? An examination of causes of conflict in the Middle East and the CH model's possible bias is discussed in the next section.

4.3 The Middle East and North Africa: Islam, Democracy and Conflict

Collier & Hoeffler's analysis clearly shows that economic development is the most important element of explaining conflict in Sub-Saharan Africa. What explains conflicts in the Middle East? Do the variables in the CH model fail to register the sources of conflict in the Middle East? I will examine the various variables in the CH model sequentially below.

Economic development and growth in the CH model is based on measures of GDP per capita. Within this framework the Middle East region seem to do be doing quite well. However, economic development in the Middle East region has been oil and state driven, and has not followed the modernization path of economic diversification, social liberalization, occupational specialization an education The Middle East is the home to some of the most as well as the least developed countries in the world. Over the last 15 years, the entire region has performed poorly, and suffers from a development deficit (Richards, 2001). *Primary commodity dependence* displays a curvilinear relationship with conflict. For high levels of dependence, the risk of conflict is low. However, resource dependence has an important impact on economic as well as political variables. Oil in the Middle East is to a large extent to blame for the lack of a healthy economic development.

Religion, ethnicity and social fractionalization are included in almost any study of armed domestic conflict. A prominent feature of the Middle East is the presence and dominance of Islam. Should we look at Islamic countries as one region, rather than the Middle East and North Africa? I included a dummy variable for all countries that are members of the Organization of Islamic Conference, and added that to various versions of CH's model on both civil war and armed civil conflict. The

Islam dummy variable was never significant. There is nothing about unique about Muslim countries that explain conflict within the CH model.

Social fractionalization and ethnic dominance are modeled to be positively and negatively, respectively, related to conflict in CH's model. For the annualized dataset, I found that fractionalization was not significant, while ethnic dominance was. This suggests that ethnic dominance and political exclusion are related to conflict. However, both these variables and others[29] fail to take into account the divisions within Islam. The major divide and source of much conflict is between Shia and Sunni Islam. However, several other Muslim sects differ from the main strands of Islam, and have often been discriminated against. In Syria, the Alawites have constituted the backbone of Assad regimes. The variables used in the CH model, and in many other datasets, do not account for important religious and ethnic groups that diversify the picture of the Middle East as a uniform cultural and religious region that 'social fractionalization' and 'ethnic dominance' variables paint. Data in this area are notoriously poor. It has not been in the interest of regimes to record groups they wished never existed (Kurds in Turkey have for long been considered as 'Mountain Turks'). The current variables used in the CH model are therefore likely to 'underpredict' conflict in the Middle East because the variables do not measure important division within Islam and possibly also other ethnic and religious divisions.

Finally, I have demonstrated the relevance of regime type within the CH model. However, authoritarian and democratic regimes are theorized to be less prone to conflict than regimes in the middle category. Within this framework, conflict in the Middle East would not be fewer if the region had been democratic. The key to understanding conflict in general, lies in the interrelatedness of the variables in the CH model, and the impact of external factors on these variables. The Middle East region has enjoyed a buffer effect of oil revenues for a long time. Due to the international allies and the importance of petroleum in world economies, external actors have supplied the region with abundant amount of military equipment and encouraged authoritarian leaders to quell and put a lid on dissent and opposition. However, the chal-

[29] Initially, I also added the variable 'ethnical heterogeneity' used in Hegre et al. (2001). The variable measures the size of the largest group (s) and is calculated as $1-s^2$. This variable combines both the 'ethnic dominance' and social fractionalization variables.

lenges the incumbent regimes are facing in order to provide food and jobs to their populations are serious. Although the authoritarian regimes so far have been successful in quelling serious political and domestic armed conflict, they have not successfully managed the economic and social platform for the future.

The 1973 oil crisis had worldwide economic and political consequences. Global repercussion on the same scale is likely to materialize if widespread civil unrest takes place in the Arab Gulf in the near future. The abundance of oil boosted the economic welfare of the Arab Gulf countries, but the political and economic structures oil has brought about provide a fruitful base for civil protest, and even war. Loot-seeking behavior aimed at controlling oil and its revenues does not characterize civil war in the Middle East. Collier & Hoeffler's model does not really fit in this regard. The rentier-concept provides a more fruitful explanation for the current and upcoming economic and political challenges oil-produces in the Middle East are facing and will increasingly face in the near future. These economic and political challenges fits into a more traditional perspective on civil war: grievance. Lack of economic and political opportunities provide fruitful based for frustration and opposition. Unless the regimes become increasingly repressive, the future bodes for growing political unrest and even civil war in the Gulf. Sick & Potter suggest that the Gulf countries are experiencing 'a crisis in slow motion' (1997: 12). In order to deal with these challenges, the Gulf regimes will be forced to loosen up their control of economic markets.

By opening up for privatization and taxation, political measures must be taken as well. Despite Western interest and protection of the current regimes, it is doubtful that they will continue to support increasingly repressive regimes. Not because they suddenly had a moral change of heart, but because the potential for unrest is so large. Even Martin Indyk, former US ambassador to Israel, special assistant to the president and secretary for Near East Affairs, has changed his mind. Indyk is now arguing for a post-nuptial agreement between the US and its Arab allies.

> The United States can no longer allow its Arab allies to ward off democratic reform … revolution in Saudi Arabia and Egypt could have a devastating impact on U.S. interests in the Middle East … The way out is to develop a middle path, working with the Egyptian and Saudi governments to promote political and economic reform—even if doing so required them to loosen some controls and take some risks (Indyk, 2002: 85-86).

Russia is currently working hard to increase it share of the international oil and gas market (Morse & Richard, 2002). The willingness of Russia to put up a fight with OPEC and the potential of Central Asia in providing energy to Western markets is a slap in the face for many current Gulf rulers, but an olive branch to their people. While no wave of democratization is likely to take place, the underlying, ineffective economic structure cannot be maintained for much longer. With unclear rules of succession, growing populations and unemployment, and regime unwilling or unable to meet these challenges in their current form, the Middle East will continue to provide a breeding ground for militant Islamists. Aspiring democrats have for long been disillusioned and disenfranchised with the lack of support for democratic change by Western regimes. By following a liberal peace-based recipe, the Middle East might prevent its economic and political witches-brew from boiling over.

A more plausible explanation for the inter-linkage between natural resource abundance and conflict in the Middle East, does not lie in the greed explanation emphasized by Collier & Hoeffler, but in the traditional rentier-state literature. The economic and political effects of oil—corruption, slow growth and authoritarianism—create basis for grievance-based conflict. Conflict in the Middle East seems best to be explained by a deficit in both democracy and development.

4.4 Summary of Results

The analysis in this study was conducted in three stages. The first replicated the CH model on a five-year period dataset. Although there were some discrepancies between the published CH results and my replication, the findings remained much the same: economic development and growth, social fractionalization and peace reduced the propensity for conflict. A large population and primary commodity dependence increased the risk. Geographical dispersion was not significant in terms of p, but in terms of log likelihood improvement. The coefficient was negative, and implied that a geographically dispersed population increases the risk of conflict. Zaire was used as an example. CH found no effect of the regime measurement 'Polity' in their analysis. Adding an alternative regime-type variable, 'Polyarchy', did not produce significant results either. Breaking up primary commodity exports into oil and mineral depend-

ency did not produce the hypothesized relationship. Neither the Sub-Saharan Africa nor the Middle East dummies were significant, and no particular, undefined regional effect was detected. Comparing the two regions, however, the model predicted widely different conflict risks for the two regions. From 1990 to 1995, the model predicts a sharp increase in the onset of conflict for Sub-Saharan Africa and a substantial decrease for the Middle East and North Africa.

I argued that the findings of Collier & Hoeffler might be influenced by the research design they had chosen. I therefore developed an *annualized version* of the CH dataset, and applied it on a dataset including civil war and armed civil conflict. For *civil war*, the analysis of the annualized dataset produces rather different results than the findings in CH's analysis. Most interestingly, social fractionalization and ethnic dominance 'switched places'. While social fractionalization was significant in the five-year analysis, it was no longer so in the annualized version. Ethnic dominance was not significant in the five-year analysis, but strongly significant in the annualized. This contrasts CH findings on mobilization (weakens their opportunity model) and political exclusion (strengthens the grievance perspective). Regime type displayed a curvilinear relationship with civil war, suggesting that opportunity as well as grievance is important. For civil war, primary commodity exports displayed an inverted U-relationship with conflict. Breaking down primary commodities to oil and mineral dependency also revealed a curvilinear pattern, but also here the coefficients were not statistically significant.

Some interesting changes also occurred when the threshold of conflict is lowered to include conflict with a minimum of 25 battle-related deaths per year. For *armed civil conflict* the social fractionalization continued to be insignificant while ethnic dominance was positively related to conflict. I draw the conclusion that the mobilization aspect is less important, and that grievance is more important than what CH argue. Quite surprisingly, primary commodity display a positively, linear relationship with armed civil conflict. Breaking down primary commodities into oil and mineral dependence led to a loss of around 1,300 observations and 35 conflicts. Oil and mineral dependency displayed only curvilinear relationships, although not at statistically significant levels. CH dropped regime type (as a linear term) from their

model because it was not significant. On the annualized dataset and using both the linear and squared term of regime type the hypothesized inverted U-relationship was recurrently present. .

In conclusion, applying the CH model to an annualized dataset was a useful experience. It shed some light on the fact that their very research design might have influenced their results. Using an annualized dataset design, both the opportunity (rather than the greed) and grievance aspects are strengthened. This study shows that regime type is relevant for an analysis of civil armed conflict. Regime type makes a difference. In some of the three-dimensional figures, the conflict curve is tilting towards the authoritarian side, possibly hinting that also democracy makes a difference.

5. Conclusion

The 'greed and grievance' approach to the study of civil war has received a lot of attention. However, the catchy title does not accurately represent the results of the research. While Collier's earlier work emphasized greed,[30] the most recent work by Collier & Hoeffler (2001, 2002) strengthen both the combined greed/opportunity and the grievance perspectives. Within the CH model, dependence on primary commodities can be interpreted as causing conflict through the mechanisms of both 'greed' and 'opportunity.' Natural resources exhibit a curvilinear relationship with conflict. This indicates that at low levels, rebels motivated by grievance are unable to finance a rebellion. High levels indicate that the price for controlling the resources is high, and the government is likely to be in control of the resource. For medium levels, when combined with either grievances or greed, rebels have the *opportunity* to finance their rebellion. The opportunity perspective, and its interrelatedness with grievance, is strengthened by the consistent, curvilinear relationship between regime type and conflict. Authoritarian and repressive regimes might host groups that hold objective grievances, but have less conflict because there is no opportunity to organize a rebellion. Dissenting and dissatisfied groups in democratic regimes have the opportunity to express opposition, but there should be less ground for grievance. Sources of both grievance and opportunity are found in semi democracies, and create a higher risk of conflict. This study has focused on the inter-linkages between resources, regimes and rebellion. The results clearly strengthen the opportunity perspective and puts regime type back in the CH model.

However, greed as the link between natural resources and conflict is highly relevant to conflict in several places. Renner[31] classifies the conflicts in Afghanistan, Angola, Burma, Cambodia, Columbia, Democratic Republic of Congo, Indonesia, Liberia, Nigeria, Papua New Guinea and Sierra Leone as 'resource-related conflicts.' Renner points to Western consumerism (the consumption of oil, natural gas, precious

[30] 'The true cause of much civil war is not the loud discourse of grievance, but the silent force of greed' (Collier, 1999: 8).
[31] Renner's report *The Anatomy of Resource War* was described in a press release on 17 October 2002 at http://www.worldwatch.org

stones and minerals, timber, drugs) and new technology[32] as important forces behind these conflicts. There is little doubt that greed is relevant in explaining conflict in several resource-rich countries. However, the link between natural resources and conflict requires a much more complex explanation than what the mechanism of pure greed provides.

Resources, Regimes and Rebellion

CH's analysis show that primary commodities export to GDP displays a curvilinear with civil conflict. I find the same result, and also for it for oil and mineral exports. In his typology of types of natural resource, Le Billon's (2001) places oil as a commodity that is only likely to remain in government control or be useful to rebels seeking a coup d'état or launching a secessionist war. I believe it is crucial that future studies on natural resources and conflict pay attention to the fact natural resources are NOT the same. Oil is very different, for geographical, physical, economic and political reasons.

Natural resources are important in explaining the onset and continuation of civil war. However, they are also of paramount importance to other aspects that influence the likelihood of conflict. Having abundant natural resources in one's territory does not predestine a country for specific patterns of economic and political development. Governance is the most important factor in deciding how natural resources are managed. The difference between oil producing countries is a useful example. Norway's stable democracy is different from the factionalized democracies in Latin America. These are again very different from the traditional-based autocracies in the Gulf, and the predatory and modernizing authoritarian states of Nigeria and Nigeria (Eifert, Tallroth & Gelb, 2002). In the Middle East and North Africa abundant access to oil has created a peculiar regional system, as well as ties to the international markets and political actors. The failure to modernize and democratize has so far not lead to major internal rebellions in the Middle East. So far, oil money has bought some of the countries enough carrots and sticks to keep their populations still. In non-oil countries, crude repression does the job. In the long-term perspective, one wonders

[32] Coltan is used in the production of cellular phones, and has only for the last decade or so been an lucrative commodity

what will happen when the oil wells run dry. There is reason to believe that deteriorating economic conditions and the lack of democracy in the Middle East (to a large extent caused by the region's resource wealth) has created a fertile based for grievance-based rebellions.

The challenges that resource dependence presents to a country's economic and political development, should serve as useful warnings for resource-rich states that are in the process of establishing institutions and markets. The 'perils of the petro-state' and the curse of natural resource are not deterministic, but can be mitigated by good governance. This if of crucial importance to resource rich East Timor and the Central Asian republics, states who are all in the making. Signs of the direction of these states' development both politically and economically are not promising. This should be a reminder for international as well as national policymakers. In resource abundance countries, control of the state, and its resources, offers a nice price. Corrupt and poor governance creates a fertile ground for future rebellion.

Natural Resources Research, Data and Methods

A recurring problem in the quantitative field of social science is access to good data. This study has shown that the link between natural resources and conflict is complex and that the area needs better data. The World Bank has started a new research project trying to map the existence and exploitation of natural resources. In addition to the lack of data, another problem complicating the quantitative approach is that natural resources that are of importance to conflicts might not be reported at all. This is in almost all cases true for drugs—an illegal substance that no government is able or willing to include in their reports to the IMF, World Bank and other financial institutions. Also, diamonds and smuggled timber operate in gray zones where their value and contribution to the national economy is underreported, at best. Even many governments' trade with legal commodities in a highly regulated international market falls outside the realm of official statistics. This is especially true when the country is involved in a conflict. Angola is an example per se. The illegal trade of the country's precious alluvial diamonds, used to buy weapons on an international illegal market, is

not estimated in international statistics.[33] Even though the government of Angola deals with international oil companies (including two Norwegians), the figures making it to the national budget are only fractions of what has been lost in the chain of corruption and lack of governance. International oil companies are not encouraging more transparency by signing so-called 'confidentiality agreements,' promising not to disclose what they are paying the government of Angola for their operations in the country.

Future Research

Based on my findings and remarks above, future research within the quantitative field should focus on providing better data. This goes for both data on natural resources and ethnic and religious groups. A joint project between PRIO and the World Bank[34] will addresses the first aspect. Other researchers should embark on improving the quality of data on ethnic and religious groups. Ellingsen (2002) has conducted commendable work in that field. However, treating Islam as one, united religion overlooks an important source of conflict.

All conflicts take place in a specific context. There is never one single cause of conflict, but the interrelatedness of the variables that explain the outcome. More case studies on the complex relationship between natural resources, regimes, economic development and inequality, ethnic domination and conflict should be conducted. The works of Hauge (2002) and Ross (2002) are praiseworthy in this regard.

Future of the Middle East and other Developing Regions

Replicating Collier & Hoeffler's analysis of civil war in Africa and the Middle East revealed that there was no mysterious Africa or Middle East effect on conflict. Conflict in these regions is well explained by the CH model on civil war. The opportunity to rebel (measured by regime type) and the existence of grievances (measured by political exclusion) emerged as statistically significant variables. Collier & Hoeffler

[33] The 08.00 am news at the Norwegian Broadcasting Company on 18 October 2002, reported that a report from the International Monetary Fund claim that NOK 8 billion had vanished from Angola's budget in 2001. The amount is more than four times the size of foreign aid given to Angola that year.
[34] http://www.prio.no/research/project.asp?ProsjektID=66

conclude that Africa would have seen less conflict if the region's economic development had equaled the world's. This study clearly shows that economic development is of importance to all conflicts. How does the future of (conflict in) the Middle East fit into this picture? The first UNDP Arab Human Development Report (AHDR)[35] released this summer provides a sober assessment of the challenges the region is facing. The report concluded that the Middle East and North Africa region's most serious challenges are the unequal distribution of wealth, the limitations on personal freedoms and the region's archaic educational systems. The region is lagging severely behind in economic, social and political aspects. The AHDR was written by Arab researchers and enjoy legitimacy in the region. Although this is positive, there are few signs that the incumbent regimes will agree to drastic social and economic change.

The interrelatedness of domestic conditions and external factors are crucial to the examination of the conflict. The geostrategic importance of the Middle East and the economic importance of its oil reserves, support for authoritarian regimes and Israel, are international aspects that have shaped and continue to shape the development of Middle East societies, economies, conflicts—and future. The region's authoritarian regimes remain in power to a large extent due to external (read: Western and in particular US) support. These regimes enjoy low levels of legitimacy, and place the West in an awkward light in many Arab eyes.

Ensuring economic development remains the key to prevent future conflicts. Improved management of resources, natural as well as human, development of more transparent and legitimate, if not democratic, regimes, is the most efficient means towards preventing new conflicts, in the Middle East as well as other developing regions. The same recipe would also be effective in the 'war on terror.' Real and perceived sense of grievance in a context of poor governance, lack of impartial information and no channels of legal opposition fuels both fundamentalism and terror.

[35] http://www.undp.org/rbas/ahdr/

6. Appendices

Appendix 1: Countries, Periods and Civil Wars Included in the Fiveyear Dataset

COW code	Country	Periods in Dataset (N=1036)	Periods in Regressions (N=709)	Civil War Onsets in Dataset (69)	Civil War Onsets in Regression (52)
2	USA	1960-95			
20	Canada	1960-95			
40	Cuba	1960-95			
41	Haiti	1960-95	1965-95		
42	Dominican Republic	1960-95	1965-95	1965	1965
51	Jamaica	1960-95	1965-95		
52	Trinidad & Tobago	1960-95	1965-95		
70	Mexico	1960-95	1965-95		
90	Guatemala	1960-95	1965, 1975-95	1965, 1975	1965, 1975
91	Honduras	1960-95	1965-75, 1985-95		
92	El Salvador	1960-95	1965-95	1975	1975
93	Nicaragua	1960-95	1965-80, 1995	1975, 1980	1975, 1980
94	Costa Rica	1960-95	1965-95		
95	Panama	1960-95	1965-95		
100	Columbia	1960-95	1965-80	1980	1980
101	Venezuela	1960-95	1965-95		
110	Guyana	1960-95	1970-95		
130	Ecuador	1960-95	1965-95		
135	Peru	1960-95	1965-80	1980	1980
140	Brazil	1960-95	1965-95		
145	Bolivia	1960-95	1965-95		
150	Paraguay	1960-95	1965-95		
155	Chile	1960-95	1965-95		
160	Argentina	1960-95	1965-95		
165	Uruguay	1960-95	1965-95		
200	United Kingdom	1960-95	1965-95		
205	Ireland	1960-95	1965-95		
210	Netherlands	1960-95	1965-95		
211	Belgium	1960-95	1965-95		
212	Luxemburg	1960-95	1965-95		
220	France	1960-95	1965-95		
225	Switzerland	1960-95	1965-95		
230	Spain	1960-95	1965-95		
235	Portugal	1960-95	1965-95		
260	German Federal Republic	1960-95	1965-95		
265	German Democratic Republic	1960-1985			
290	Poland	1960-1990			
305	Austria	1960-95	1965-95		
310	Hungary	1960-95	1975-95		
315	Czechoslovakia	1960-1990			
316	Czech Republic	1990-95			

317	Slovakia	1990-95				
325	Italy	1960-95	1965-95			
339	Albania	1960-95				
343	Macedonia	1990-95				
344	Croatia	1990-95				
345	Yugoslavia	1990-95		1990, 1995		
346	Bosnia-Herzegovina	1990-95				
349	Slovenia	1990-95				
350	Greece	1960-95	1965-95			
352	Cyprus	1960-95	1965-90	1970	1970	
355	Bulgaria	1960-95	1985-95			
359	Moldova	1990-95				
360	Romania	1960-95	1965-95	1985	1985	
365	Russia	1960-95	1965-85	1990, 1995		
366	Estonia	1960-95				
367	Latvia	1960-95				
368	Lithuania	1960-95				
369	Ukraine	1990-95				
370	Belarus	1990-95				
371	Armenia	1990-95				
372	Georgia	1990-95				
373	Azerbaijan	1990				
375	Finland	1960-95	1965-95			
380	Sweden	1960-95	1965-95			
385	Norway	1960-95	1965-95			
390	Denmark	1960-95	1965-95			
395	Iceland	1960-95	1965-95			
404	Guinea-Bissau	1970-95	1975-95			
411	Eq. Guinea	1965-95				
420	Gambia	1965-1990	1965-95			
432	Mali	1960-95	1965-95			
433	Senegal	1960-95	1965-95			
434	Benin	1960-95	1965-90			
435	Mauritania	1960-95	1965-95			
436	Niger	1960-95	1965-95			
437	Ivory Coast	1960-95	1965-95			
438	Guinea	1960-95	1965-95			
439	Burkina Faso	1960-95	1965-95			
450	Liberia	1960-95	1965-85	1985, 1990	1985	
451	Sierra Leone	1960-95	1970-95	1990, 1995	1990, 1995	
452	Ghana	1960-95	1965-95			
461	Togo	1960-95	1965-95			
471	Cameroun	1960-95	1965-95			
475	Nigeria	1960-95	1965-95	1965, 1980	1965, 1980	
481	Gabon	1960-95	1965-95			
482	Central African Republic	1960-95	1965-95			
483	Chad	1960-95	1965-80, 1990-95	1980	1980	
484	Congo	1960-95	1965-95	1995	1995	
490	Zaire	1960-95	1970-95	1960, 1990, 1995	1990, 1995	
500	Uganda	1960-95	1965-80, 1990-95	1965, 1980	1965, 1980	
501	Kenya	1960-95	1965-95			
510	Tanzania	1960-95	1965-85			
516	Burundi	1960-95	1965-90	1970, 1985, 1990	1970, 1985, 1990	
517	Rwanda	1960-95	1965-95	1990	1990	

520	Somalia	1960-95	1965-85	1980, 1985	1980, 1985
522	Djibouti	1975-95	1980-85		
530	Ethiopia	1960-95	1965-70, 1995	1970	1970
531	Eritrea	1990-95			
540	Angola	1975-95	1975, 1990	1975, 1990	1975, 1990
541	Mozambique	1975-95	1975, 1995	1975	1975
551	Zambia	1960-95	1965-95		
552	Zimbabwe	1960-95	1965-70, 1980-95	1970	1970
553	Malawi	1960-95	1965-95		
560	South Africa	1960-95	1965-95		
565	Namibia	1990-95	1990-95		
570	Lesotho	1965-95	1965-95		
571	Botswana	1965-95	1970-90		
572	Swaziland	1965-95	1970-95		
580	Madagascar	1965-95	1965-95		
581	Comoros	1975-95			
590	Mauritius	1965-95	1970-95		
600	Morocco	1960-95	1965-75, 1990-95	1975	1975
615	Algeria	1960-95	1965-90	1990	1990
616	Tunisia	1960-95	1965-95		
620	Libya	1960-95			
625	Sudan	1960-95	1975-80	1960, 1980	1980
630	Iran	1960-95	1965-95	1970, 1975, 1980	1970, 1975, 1980
640	Turkey	1960-95	1965-90	1990	1990
645	Iraq	1960-95	1965-70, 1980-85	1960, 1970, 1985	1970, 1985
651	Egypt	1960-95	1965-95		
652	Syria	1960-95	1965-95		
660	Lebanon	1960-95		1975	
663	Jordan	1960-95	1965-95	1970	1970
666	Israel	1960-95	1965-95		
670	Saudi Arabia	1960-95	1965-95		
678	Yemen Arab Republic	1960-1985		1960	
679	Yemen Arab Republic	1990-95		1990	
680	Yemen People's Republic	1965-1985		1985	
690	Kuwait	1960-95	1985-95		
692	Bahrain	1970-95			
694	Qatar	1970-95			
696	United Arab Emirates	1970-95			
698	Oman	1960-95	1975-95		
700	Afghanistan	1960-95		1975, 1990	
701	Turkmenistan	1990-95			
702	Tajikistan	1990-95			
703	Kyrgyz Republic	1990-95			
704	Uzbekistan	1990-95			
705	Kazakstan	1990-95			
710	China	1960-95	1965-95	1965	1965
712	Mongolia	1960-95	1990-95		
713	Republic of China (Taiwan)	1960-95			
731	Korea, North	1960-95			
732	Korea, South	1960-95	1965-95		
740	Japan	1960-95	1965-95		
750	India	1960-95	1965-80, 1995	1965, 1980	1965, 1980
760	Bhutan	1960-95			
770	Pakistan	1960-95	1965-95	1970	1970

771	Bangladesh	1970-95	1975-95		
775	Burma	1960-95	1965, 1980	1965, 1980	1965, 1980
780	Sri Lanka	1960-95	1965-80	1970, 1980	1970, 1980
790	Nepal	1960-95	1965-95		
800	Thailand	1960-95			
811	Cambodia	1960-95		1970	
812	Laos	1960-95	1990	1960	
816	Vietnam, Dem. Republic of	1960-95		1960	
817	Vietnam, Republic of	1960-1970			
820	Malaysia	1960-95	1965-95		
830	Singapore	1960-95			
840	Philippines	1960-95	1965-70	1970	1970
850	Indonesia	1960-95	1965-75, 1985-95	1975	1975
900	Australia	1960-95	1965-95		
910	Papua New Guinea	1975-95	1975-95		
920	New Zealand	1960-95	1965-95		
950	Fiji	1960-95	1970-95		

* Countrycodes refer to Singer & Small (1994) numbers

Appendix 2: Countries and Periods included in the Single-year Dataset

Code*	Country	Country-years in the analysis (N= 3892)**
2	USA	
20	Canada	
40	Cuba	
41	Haiti	1961-1996
42	Dominican Republic	1960-1997
51	Jamaica	1963-1997
52	Trinidad & Tobago	1965-1977
70	Mexico	1960-1997
90	Guatemala	1960-1997
91	Honduras	1960-1997
92	El Salvador	1960-1992
93	Nicaragua	1960-1997
94	Costa Rica	1960-1997
95	Panama	1960-1997
100	Columbia	1960-1997
101	Venezuela	1960-1997
110	Guyana	1970-1997
130	Ecuador	1960-1997
135	Peru	1960-1997
140	Brazil	1960-1997
145	Bolivia	1960-1997
150	Paraguay	1960-1997
155	Chile	1960-1997
160	Argentina	1960-1997
165	Uruguay	1960-1997
200	United Kingdom	1960-1997
205	Ireland	1960-1997
210	Netherlands	1960-1997
211	Belgium	1960-1997
212	Luxemburg	1960-1997
220	France	1960-1997
225	Switzerland	1960-1997
230	Spain	1960-1997
235	Portugal	1960-1997
260	German Federal Republic	1960-1997
265	German Democratic Republic	
290	Poland	
305	Austria	
310	Hungary	1960-1997
315	Czechoslovakia	1960-1992
316	Czech Republic	
317	Slovakia	
325	Italy	1960-1997
339	Albania	
343	Macedonia	
344	Croatia	
345	Yugoslavia	
346	Bosnia-Herzegovina	
349	Slovenia	
350	Greece	1960-1997
352	Cyprus	1961-1997
355	Bulgaria	1970-1996
359	Moldova	
360	Romania	1961-1997
365	Russia	1960-1997
366	Estonia	
367	Latvia	
368	Lithuania	
369	Ukraine	
370	Belarus	
371	Armenia	
372	Georgia	
373	Azerbaijan	
375	Finland	1960-1997
380	Sweden	1960-1997
385	Norway	1960-1997
390	Denmark	1960-1997
395	Iceland	1960-1997
404	Guinea-Bissau	1975-1997
411	Eq. Guinea	
420	Gambia	1966-1997
432	Mali	1965-1997
433	Senegal	1961-1997
434	Benin	1961-1994
435	Mauritania	1961-1997
436	Niger	1961-1997
437	Ivory Coast	1961-1997
438	Guinea	1960-1997
439	Burkina Faso	1962-1997
450	Liberia	1961-1986
451	Sierra Leone	1965-1997
452	Ghana	1960-1997
461	Togo	1961-1997
471	Cameroun	1961-1997
475	Nigeria	1961-1997
481	Gabon	1961-1997
482	Central African Republic	1961-1997
483	Chad	1961-1997
484	Congo	1961-1997
490	Zaire	1961-1997
500	Uganda	1965-1997
501	Kenya	1965-1997
510	Tanzania	1966-1997
516	Burundi	1965-1997
517	Rwanda	1965-1997

520	Somalia	1965-1989
522	Djibouti	1980-1997
530	Ethiopia	1960-1997
531	Eritrea	
540	Angola	1990
541	Mozambique	1976-1997
551	Zambia	1965-1997
552	Zimbabwe	1966-1997
553	Malawi	1965-1997
560	South Africa	1960-1997
565	Namibia	1991-1997
570	Lesotho	1967-1997
571	Botswana	1970-1994
572	Swaziland	1970-1997
580	Madagascar	1961-1997
581	Comoros	
590	Mauritius	1970-1997
600	Morocco	1961-1996
615	Algeria	1965-1993
616	Tunisia	1961-1997
620	Libya	
625	Sudan	1962-1994
630	Iran	1960-1997
640	Turkey	1960-1991
645	Iraq	1960-1987
651	Egypt	1960-1997
652	Syria	1962-1997
660	Lebanon	1991-1997
663	Jordan	1960-1997
666	Israel	1962-1996
670	Saudi Arabia	1961-1997
678	Yemen Arab Republic	
679	Yemen Arab Republic	
680	Yemen People's Republic	
690	Kuwait	1965-1997
692	Bahrain	
694	Qatar	
696	United Arab Emirates	
698	Oman	1972-1995
700	Afghanistan	
701	Turkmenistan	
702	Tajikistan	
703	Kyrgyz Republic	
704	Uzbekistan	
705	Kazakstan	
710	China	1960-1997
712	Mongolia	1985-1997
713	Republic of China, Taiwan	
731	Korea, North	
732	Korea, South	1991-1961
740	Japan	1960-1997
750	India	1960-1997
760	Bhutan	1990-1997
770	Pakistan	1960-1997
771	Bangladesh	1975-1997
775	Burma	1961-1992
780	Sri Lanka	1960-1994
790	Nepal	1961-1997
800	Thailand	
811	Cambodia	
812	Laos	1985-1994
816	Vietnam, Dem. Republic of	1987-1997
817	Vietnam, Republic of	
820	Malaysia	1961-1997
830	Singapore	
840	Philippines	1960-1997
850	Indonesia	1961-1997
900	Australia	1960-1997
910	Papua New Guinea	1977-1997
920	New Zealand	1960-1996
950	Fiji	1972-1997

* Countrycodes refer to Singer & Small (1994) numbers.

** The list of countries are period is based on the observations included in the regression including the largest number of observations. Although countries might drop out in some year, the period listed is the first and last year the country was included in the largest regression

Code	**Country**	**Country-years in the Dataset (N= 6375)**
2	USA	
20	Canada	
40	Cuba	
41	Haiti	
42	Dominican Republic	
51	Jamaica	
52	Trinidad & Tobago	
70	Mexico	
90	Guatemala	
91	Honduras	
92	El Salvador	
93	Nicaragua	
94	Costa Rica	
95	Panama	

100	Columbia
101	Venezuela
110	Guyana
130	Ecuador
135	Peru
140	Brazil
145	Bolivia
150	Paraguay
155	Chile
160	Argentina
165	Uruguay
200	United Kingdom
205	Ireland
210	Netherlands
211	Belgium
212	Luxemburg
220	France
225	Switzerland
230	Spain
235	Portugal
260	German Federal Republic
265	German Democratic Republic
290	Poland
305	Austria
310	Hungary
315	Czechoslovakia
316	Czech Republic
317	Slovakia
325	Italy
339	Albania
343	Macedonia
344	Croatia
345	Yugoslavia
346	Bosnia-Herzegovina
349	Slovenia
350	Greece
352	Cyprus
355	Bulgaria
359	Moldova
360	Romania
365	Russia
366	Estonia
367	Latvia
368	Lithuania
369	Ukraine
370	Belarus
371	Armenia
372	Georgia
373	Azerbaijan
375	Finland
380	Sweden
385	Norway
390	Denmark
395	Iceland
404	Guinea-Bissau
411	Eq. Guinea
420	Gambia
432	Mali
433	Senegal
434	Benin
435	Mauritania
436	Niger
437	Ivory Coast
438	Guinea
439	Burkina Faso
450	Liberia
451	Sierra Leone
452	Ghana
461	Togo
471	Cameroun
475	Nigeria
481	Gabon
482	Central African Republic
483	Chad
484	Congo
490	Zaire
500	Uganda
501	Kenya
510	Tanzania
516	Burundi
517	Rwanda
520	Somalia
522	Djibouti
530	Ethiopia
531	Eritrea
540	Angola
541	Mozambique
551	Zambia
552	Zimbabwe
553	Malawi
560	South Africa
565	Namibia
570	Lesotho
571	Botswana
572	Swaziland
580	Madagascar
581	Comoros
590	Mauritius
600	Morocco
615	Algeria
616	Tunisia
620	Libya
625	Sudan
630	Iran
640	Turkey
645	Iraq
651	Egypt

652	Syria
660	Lebanon
663	Jordan
666	Israel
670	Saudi Arabia
678	Yemen Arab Republic
679	Yemen Arab Republic
680	Yemen People's Republic
690	Kuwait
692	Bahrain
694	Qatar
696	United Arab Emirates
698	Oman
700	Afghanistan
701	Turkmenistan
702	Tajikistan
703	Kyrgyz Republic
704	Uzbekistan
705	Kazakstan
710	China
712	Mongolia
713	Republic of China (Taiwan)
731	Korea, North
732	Korea, South
740	Japan
750	India
760	Bhutan
770	Pakistan
771	Bangladesh
775	Burma
780	Sri Lanka
790	Nepal
800	Thailand
811	Cambodia
812	Laos
816	Vietnam, Dem. Republic of
817	Vietnam, Republic of
820	Malaysia
830	Singapore
840	Philippines
850	Indonesia
900	Australia
910	Papua New Guinea
920	New Zealand
950	Fiji

* Countrycodes refer to Singer & Small (1994) numbers

Appendix 3: Descriptive Statistics, Five-year Dataset (1960-99)

Entire Dataset

	Sample					*Africa**					*Other Developing Countries***				
	M	*SD*	*Min*	*Max*	*N*	*M*	*SD*	*Min*	*Max*	*N*	*M*	*SD*	*Min*	*Max*	*N*
War starts	0.072	0.259	0	1	959	0.094	0.292	0	1	276	0.085	0.280	0	1	492
GDP per capita	4045.8	4398.9	222.0	33946.1	930	1035.3	894.0	222	6833	287	3517.5	3578.7	316.0	33946.1	451
Logged GDP/cap	7.76	1.07	5.40	10.43	930	6.73	0.59	5.40	8.83	287	7.84	0.78	5.76	10.43	451
GDP cap growth	1.41	3.76	-22.08	14.41	822	0.17	3.69	-10.49	12.29	263	1.70	4.18	-22.08	14.41	391
Primary commod. exports/GDP	0.15	0.15	0.002	1.198	997	0.18	0.14	0.009	0.568	290	0.16	0.17	0.003	1.198	515
Oil dependence	0.04	0.11	0	0.96	763	0.04	0.12	0	0.798	198	0.054	0.127	0	0.960	394
Mineral depend.	0.014	0.037	0	0.31	790	0.03	0.06	<0.00	0.31	206	0.012	0.03	0	0.278	408
Social fractionaliz.	1811	1935	4	6975	995	3630	1936	20	6975	298	1141	1383	4	5168	505
Ethnic dominance	0.46	0.50	0	1	1016	0.37	0.48	0	1	298	0.54	0.50	0	1	526
Peace duration	324	167	1	592	959	320	171	1	592	276	304	169	1	592	492
Population (mill.)	31.5	105.6	0.17	1203.32	1030	9.0	13.8	0.28	111.27	297	43.6	141.0	0.171	1203.3	541
Logged population	15.87	1.56	12.05	20.91	1030	15.31	1.20	12.55	18.53	297	16.03	1.63	12.05	20.91	541
Geogr. Dispersion	0.60	0.20	0	0.97	964	0.57	0.18	0	0.86	298	0.60	0.21	0.003	0.92	490
Polyarchy	8.93	12.22	0	43.75	1028	2.02	4.27	0	21.66	294	6.03	8.97	0	42.52	542

Observations Included in the Analyses

	Sample					*Africa**					*Other Developing Countries***				
	M	*SD*	*Min*	*Max*	*N*	*M*	*SD*	*Min*	*Max*	*N*	*M*	*SD*	*Min*	*Max*	*N*
War starts	0.073	0.261	0	1	709	0.096	0.296	0	1	239	0.088	0.284	0	1	317
GDP per capita	4022.15	4075.13	222	18993	709	1089.08	955.28	222	6833	239	3326.92	2422.50	415.00	14009	317
Logged GDP/cap	7.77	1.06	5.40	9.85	709	6.77	0.60	5.40	8.83	239	7.87	0.70	6.03	9.55	317
GDP cap growth	1.52	3.50	-13.09	14.41	709	0.23	3.77	-10.49	12.29	239	1.92	3.61	-13.09	14.41	317
Primary commod. exports/GDP	0.153	0.139	0.002	0.935	709	0.187	0.139	0.022	0.568	239	0.16	0.15	0.003	0.94	317
Oil dependence	0.04	0.11	0	0.96	578	0.05	0.13	<0.00	0.80	163	0.510	0.12	0	0.96	280
Mineral depend.	0.016	0.042	0	0.31	596	0.03	0.06	<0.00	0.31	167	0.01	0.03	0	0.28	290
Social fractionaliz.	1797.78	2001.29	12	6975	709	3666.58	1924.55	68	6975	239	1006.57	1374.40	12	5168	317
Ethnic dominance	0.42	0.49	0	1	709	0.36	0.48	0	1	239	0.48	0.50	0	1	317
Peace duration	344.86	162.22	1	592	709	328.05	168.24	1	592	239	325.69	167.44	1	592	317
Population (mill.)	32.26	113.84	0.19	1203.32	709	8.62	14.12	0.28	111.27	239	53.88	165.94	0.52	1203.32	317
Logged population	15.86	1.53	12.18	20.91	709	15.28	1.17	12.55	18.53	239	16.17	1.64	13.16	20.91	317
Geogr. dispersion	0.61	0.20	0	0.97	709	0.57	0.19	0	0.85	239	0.63	0.21	0.005	0.92	317
Polyarchy	10.32	13.12	0	43.75	707	2.00	4.26	0	21.66	237	7.50	9.80	0	42.52	317

*: See research design for definition. **: non-OECE. non-African countries

Entire Dataset

	Sample					*Middle East**					*Other Developing Countries***				
	M	SD	Min	Max	N	M	SD	Min	Max	N	M	SD	Min	Max	N
War starts	0.072	0.259	0	1	959	0.110	0.314	0	1	127	0.085	0.279	0	1	648
GDP per capita	4045.8	4398.9	222.0	33946.1	930	5587.5	5690.3	809.0	33946.1	113	2013.0	1876.9	222.0	15906.0	633
Logged GDP/cap	7.76	1.07	5.40	10.43	930	8.26	0.84	6.70	10.43	113	7.27	0.81	5.40	9.67	633
GDP cap growth	1.41	3.76	-22.08	14.41	822	1.44	4.97	-13.85	14.41	96	1.04	3.87	-22.08	12.29	565
Primary commodity exports /GDP	0.15	0.15	0.002	1.198	997	0.25	0.25	0.006	1.198	131	0.15	0.14	0.003	0.761	682
Oil dependence	0.04	0.11	0	0.96	763	0.14	0.20	<0.00	0.96	104	0.03	0.09	0	0.80	496
Mineral depend.	0.014	0.037	0	0.31	790	0.01	0.02	0	0.15	104	0.02	0.04	0	0.31	518
Social fractional.	1811	1935	4	6975	995	251	237	4	938	125	2376	2013	20	6975	686
Ethnic dominance	0.46	0.50	0	1	1016	0.55	0.50	0	1	130	0.47	0.50	0	1	702
Peace duration	324	167	1	592	959	295	177	1	592	127	313	168	1	592	648
Population (mill.)	31.5	105.6	0.17	1203.32	1030	13.02	15.31	0.171	61.64	133	34.89	123.9	0.28	1203.3	713
Logged population	15.87	1.56	12.05	20.91	1030	15.57	1.45	12.05	17.94	133	15.84	1.55	12.55	20.91	713
Geogr. dispersion	0.60	0.20	0	0.97	964	0.61	0.26	0.003	0.923	122	0.59	0.19	0	0.905	674
Polyarchy	8.93	12.22	0	43.75	1028	3.78	8.66	0	33.42	134	4.94	7.88	0	42.52	710

Observations Included in the Analyses

	Sample					*Middle East**					*Other Developing Countries***				
	M	SD	Min	Max	N	M	SD	Min	Max	N	M	SD	Min	Max	N
War starts	0.073	0.261	0	1	709	0.115	0.322	0	1	78	0.089	0.284	0	1	484
GDP per capita	4022.15	4075.13	222	18993	709	4449.44	3116.61	1024	14009	78	2033.91	1829.92	222	11262	484
Logged GDP/cap	7.77	1.06	5.40	9.85	709	8.18	0.67	6.93	9.55	78	7.28	0.81	5.40	9.33	484
GDP cap growth	1.52	3.50	-13.09	14.41	709	2.02	4.71	-13.09	14.41	78	1.08	3.57	-10.49	12.29	484
Primary commod. exports /GDP	0.153	0.137	0.002	0.935	709	0.21	0.20	0.018	0.94	78	0.165	0.136	0.003	0.71	484
Oil dependence	0.04	0.11	0	0.96	578	0.12	0.18	<0.00	0.96	74	0.04	0.10	0	0.80	375
Mineral depend.	0.016	0.042	0	0.31	596	0.007	0.012	<0.00	0.06	74	0.02	0.05	0	0.31	389
Social fractional.	1797.78	2001.29	12	6975	709	219.55	163.79	12	462	78	2439.40	2098.85	42	6975	484
Ethnic dominance	0.42	0.49	0	1	709	0.55	0.501	0	1	78	0.42	0.49	0	1	484
Peace duration	344.86	162.21	1	592	709	307.64	173.90	1	592	78	330.47	166.03	1	592	484
Population (mill.)	32.26	113.84	0.19	1203.32	709	17.07	16.72	0.85	61.18	78	37.33	136.35	0.28	1203.32	484
Logged population	15.86	1.53	12.18	20.91	709	16.09	1.16	13.65	17.93	78	15.76	1.57	12.55	20.91	484
Geogr. dispersion	0.61	0.20	0	0.97	709	0.66	0.22	0.005	0.92	78	0.59	0.20	0	0.90	484
Polyarchy	10.32	13.12	0	43.75	707	4.47	9.56	0	33.42	78	5.39	8.25	0	42.52	482

*: See research design for definition. **: non-OECE. non-Middle Eastern countries.

Appendix 4: Descriptive Statistics, One-year Dataset (1960-97)

	Entire Dataset					*Sub-Saharan Africa*					*Middle East and North Africa*				
	M	SD	Min	Max	N	M	SD	Min	Max	N	M	SD	Min	Max	N
Civil war onsets	0.016	0.124	0	1	5131	0.015	0.123	0	1	1367	0.018	0.133	0	1	666
Peace years (CW)	23.941	13.816	0	52	5131	17.211	10.738	0	45	1367	21.829	13.857	0	52	666
Armed civil conflict onsets	0.034	0.180	0	1	4670	0.043	0.203	0	1	1277	0.036	0.186	0	1	557
Peace years (ACC)	20.822	13.895	0	52	4670	13.662	9.787	0	43	1277	16.989	12.185	0	52	557
GDP per capita	5231	8248	76.63	47821	4820	607	816	84.7	8502	1432	5812	8340	245.3	47502	561
GDP per capita (logged)	7.409	1.571	4.339	10.775	4820	6.000	0.803	4.440	9.048	1432	7.888	1.223	5.502	10.769	561
Economic growth	0.019	0.072	-0.722	1.546	4728	0.009	0.070	-0.397	0.670	1391	0.018	0.082	-0.437	0.418	548
Primary commodity dependence	0.153	0.153	0.002	1.198	4724	0.180	0.136	0.009	0.568	1372	0.250	0.247	0.006	1.198	621
Oil dependence	0.035	0.109	0	1.138	3079	0.037	0.120	0	1.086	680	0.135	0.212	0	1.138	435
Mineral dependence	0.014	0.038	0	0.412	3274	0.028	0.062	0	0.412	769	0.010	0.021	0	0.154	433
Social fractionalization	1806.99	1933.88	4	6975	4714	3632.40	1933.77	20	6975	1406	251.119	236.690	4	938	595
Ethnic dominance	0.461	0.499	0	1	4813	0.372	0.484	0	1	1406	0.550	0.498	0	1	618
Population (million)	30.5	104	0.122	123	5198	8.9	13.8	0.206	118	1467	12.8	15.3	0.122	63.7	665
Population (logged)	15.851	1.554	11.712	20.928	5198	15.257	1.261	12.235	18.585	1467	15.527	1.460	11.712	17.970	665
Geographical dispersion	0.598	0.198	0	0.971	4555	0.572	0.182	0	0.858	1406	0.607	0.255	0.003	0.923	576
Polyarchy	9.755	12.570	0	47.11	5266	2.849	5.260	0	27.66	1454	3.892	8.898	0	37.52	689

*: See research design for definition.

Appendix 5: Correlation Matrix, Five-year Dataset (1960-99)

	Variables, labels as in dataset:																			
Variables, full name:	**warsa**	**lngdp_**	**gy1**	**sxp**	**sxp2**	**oildep**	**oildep2**	**Min dep**	**Min dep2**	**frac**	**etdo 4590**	**peace**	**lnpop**	**geogia**	**Van hanen**	**vanha-nen2**	**ssa**	**francz**	**mid east**	
Civil war starts	1																			
GDP per capita	-0.183	1																		
Economic growth	-0.087	0.216	1																	
Primary comm. dep.	0.041	-0.007	-0.051	**1**																
Primary comm. dependence sq.	0.011	0.069	0.005	**0.928**	1															
Oil dependence	0.094	0.145	-0.041	0.616	0.660	1														
Oil dependence sq.	0.092	0.100	-0.011	0.523	0.641	**0.903**	1													
Mineral depend.	-0.075	-0.193	-0.131	0.387	0.320	-0.076	-0.055	1												
Mineral depen. sq.	-0.056	-0.163	-0.122	0.349	0.311	-0.065	-0.042	**0.934**	1											
Social fractionaliz.	0.058	-0.508	-0.147	0.244	0.165	0.094	0.080	0.206	0.184	1										
Ethnic dominance	0.050	0.103	-0.036	-0.011	0.015	0.028	0.000	-0.056	-0.006	**0.002**	1									
Peace months	-0.209	0.416	-0.109	0.026	0.047	0.052	0.017	0.066	0.055	-0.169	0.012	1								
Population	0.109	0.017	0.094	-0.396	-0.290	-0.055	-0.043	-0.200	-0.153	-0.110	-0.047	-0.098	1							
Geographic disper.	-0.043	0.104	0.021	-0.017	0.005	0.031	-0.010	0.061	0.015	-0.188	0.039	0.001	0.122	1						
Polyarchy	-0.150	**0.702**	0.074	-0.229	-0.182	-0.166	-0.133	-0.106	-0.085	-0.322	0.033	0.392	0.054	-0.022	1					
Polyarchy sq.	-0.140	0.681	0.073	-0.229	-0.181	-0.150	-0.117	-0.105	-0.088	-0.312	0.014	0.384	0.052	-0.015	**0.960**	1				
Sub-Saharan Africa	0.027	-0.664	-0.245	0.160	0.086	0.038	0.057	0.210	0.181	0.697	-0.091	-0.131	-0.242	-0.145	-0.425	-0.371	1			
French Col. Africa	-0.054	-0.340	-0.106	0.082	0.056	0.071	0.044	0.004	-0.035	0.416	-0.052	0.044	-0.229	0.026	-0.268	-0.223	0.570	1		
Middle East and North Africa	0.059	0.108	0.060	0.164	0.204	0.291	0.207	-0.088	-0.074	-0.280	0.122	-0.049	0.017	0.067	-0.188	-0.153	-0.240	-0.137	1	

Appendix 6: Correlation Matrix, One-year Dataset (1960-97)

	Variables, labels as in dataset:																			
Variables, full names:	**Upsala newcw**	**Peace yearscw**	**Uppsala new**	**Peace uppnew**	**gdpcap**	**gdpgro wt**	**s1sxp**	**s1sxp2**	**oildep**	**oildep2**	**mindep**	**min dep2**	**s1frac**	**s1etdo45 90**	**lnpop 98**	**s1 geogia**	**Van hanen**	**Van hanen2**	**mideast**	**ssa1**
Civil war onset	1																			
Peace years (CW)	-0.066	1																		
Armed civil conflict onset	0.454	-0.051	1																	
Peace years (ACC)	-0.070	**0.711**	-0.068	1																
GDP per capita	-0.085	0.502	-0.115	0.520	1															
GDP growth	-0.013	-0.013	-0.060	0.018	0.088	1														
Primary comm. dep	0.004	-0.121	0.011	-0.186	-0.066	-0.073	1													
Primary comm. dep sq.	-0.008	-0.092	0.012	-0.141	0.028	-0.060	**0.936**	1												
Oil dependence	0.005	0.041	0.006	-0.064	0.035	-0.107	0.498	0.524	1											
Oil dependence sq.	-0.006	0.002	-0.005	-0.069	0.022	-0.100	0.397	0.470	**0.901**	1										
Mineral dependence	-0.021	-0.085	-0.003	-0.092	-0.189	-0.101	0.361	0.298	-0.063	-0.046	1									
Mineral dependence sq.	-0.015	-0.106	-0.003	-0.075	-0.146	-0.089	0.309	0.275	-0.050	-0.030	**0.914**	1								
Social fractionalization	0.059	-0.421	0.049	-0.366	-0.501	-0.070	0.219	0.138	0.021	0.033	0.239	0.206	1							
Ethnic dominance	0.034	-0.155	0.024	-0.145	0.013	-0.038	0.021	0.053	0.024	0.015	-0.074	-0.030	0.029	1						
Population	0.046	0.159	0.095	0.061	0.000	0.075	-0.412	-0.315	-0.012	-0.017	-0.188	-0.130	-0.122	-0.067	1					
Geographic dispersion	0.010	0.110	0.009	0.002	0.004	0.026	-0.092	-0.101	-0.025	-0.055	0.083	0.028	-0.134	0.060	0.157	1				
Polyarchy	-0.043	0.442	-0.068	0.466	**0.714**	0.040	-0.253	-0.213	-0.155	-0.112	-0.130	-0.098	-0.310	-0.009	0.072	-0.040	1			
Polyarchy sq.	-0.045	0.445	-0.078	0.487	**0.712**	0.041	-0.246	-0.204	-0.134	-0.100	-0.127	-0.099	-0.305	-0.034	0.071	-0.043	**0.957**	1		
Middle East/North Africa	-0.015	-0.009	-0.015	0.045	0.079	-0.029	0.058	0.007	-0.052	-0.028	0.067	0.056	0.090	0.106	-0.168	-0.076	0.126	0.088	1	
Sub-Saharan Africa	0.020	-0.474	0.006	-0.356	-0.617	-0.119	0.114	0.043	0.024	0.039	0.233	0.196	**0.703**	-0.085	-0.195	-0.084	-0.433	-0.377	-0.098	1

Appendix 7: The PRIO/Uppsala Conflict Database, 1946-2001

ID	SubID	Location	Side_A	Side_B	Begin	End	Intensity*1	Type*2
2370	1	Afghanistan	Afghanistan, Soviet Union	Various organizations	1979	1988	3	4
2370	0	Afghanistan	Afghanistan	Various organizations	1978	1978	3	3
2370	2	Afghanistan	Afghanistan	Various organizations	1989	2001	3	3
2930	0	Algeria	Algeria	FIS, Expiation and Sin, Exile and Redemption, The Faithful of the Sermon, The Brigades of God, GIA, Dawa wal Jihad	1992	1992	1	3
2930	0	Algeria	Algeria	FIS, Expiation and Sin, Exile and Redemption, The Faithful of the Sermon, The Brigades of God, GIA, Dawa wal Jihad	1993	2001	3	3
2310	0	Angola	Angola, Cuba	UNITA , South Africa, FNLA , Zaire	1975	1989	3	4
2310	1	Angola	Angola	UNITA	1990	1994	3	3
2310	1	Angola	Angola	UNITA	1995	1995	2	3
2310	1	Angola	Angola	UNITA	1998	1999	3	3
2940	0	Angola	Angola	FLEC	1992	1992	1	3
2940	0	Angola	Angola	FLEC	1994	1994	1	3
2940	0	Angola	Angola	FLEC	1996	1997	1	3
2310	2	Angola	Angola, Namibia	UNITA	2000	2001	3	4
1500	0	Argentina	Argentina	Military faction	1955	1955	1	3
1500	0	Argentina	Argentina	Military faction	1963	1963	1	3
1500	0	Argentina	Argentina	ERP , Montoneros	1973	1974	1	3
1500	0	Argentina	Argentina	ERP , Montoneros	1975	1975	3	3
1500	0	Argentina	Argentina	ERP , Montoneros	1976	1977	2	3
2950	0	Azerbaijan	Azerbaijan	Republic of Nagorno-Karabakh, Armenia	1992	1993	3	4
2950	1	Azerbaijan	Azerbaijan	Republic of Nagorno-Karabakh	1994	1994	3	3
3030	0	Azerbaijan	Azerbaijan	Husseinov military faction	1993	1993	1	3
3030	0	Azerbaijan	Azerbaijan	OPON forces	1995	1995	1	3
2260	0	Bangladesh	Bangladesh	JSS/SB/Shanti Bahini	1974	1986	1	3
2260	0	Bangladesh	Bangladesh	JSS/SB/Shanti Bahini	1987	1992	2	3
1010	0	Bolivia	Bolivia	Popular Revolutionary Movement	1946	1946	3	3
1010	1	Bolivia	Bolivia	MNR	1951	1951	1	3
1010	1	Bolivia	Bolivia	ELN	1967	1967	1	3
2960	0	Bosnia and Herzegovina	Bosnia and Herzegovina	Serbian Republic of Bosnia and Herzegovina Serbian irregulars, Yugoslavia	1992	1993	3	4

3050	0	Bosnia and Herzegovina	Bosnia and Herzegovina	Croatian Republic of Bosnia and Herzegovina Croatia, Croatian irregular	1993	1993	3	4
2960	0	Bosnia and Herzegovina	Bosnia and Herzegovina	Serbian Republic of Bosnia and Herzegovina, Serbian irregulars	1994	1995	2	3
3040	0	Bosnia and Herzegovina	Bosnia and Herzegovina	Autonomous Province of Western Bosnia	1993	1995	1	3
3050	0	Bosnia and Herzegovina	Bosnia and Herzegovina	Croatian Republic of Bosnia and Herzegovina, Croatian irregulars	1994	1994	2	3
2660	0	Burkina Faso	Burkina Faso	Popular Front	1987	1987	1	3
1230	0	Burma	Burma	KNU and KNDO	1948	1949	3	3
1230	0	Burma	Burma	KNU and KNDO	1950	1991	2	3
1230	0	Burma	Burma	KNU	1992	1992	3	3
1230	0	Burma	Burma	KNU	1993	1995	2	3
1230	0	Burma	Burma	KNU	1997	2001	2	3
1240	0	Burma	Burma	BCP, leftist organisations	1948	1953	3	3
1240	0	Burma	Burma	BCP, leftist organisations	1954	1967	2	3
1240	0	Burma	Burma	BCP, leftist organisations	1968	1978	3	3
1240	0	Burma	Burma	BCP, leftist organisations	1979	1988	2	3
1240	0	Burma	Burma	ABSDF	1991	1992	1	3
1250	0	Burma	Burma	Arakan Insurgents	1948	1988	1	3
1250	0	Burma	Burma	Arakan Insurgents	1991	1992	1	3
1250	0	Burma	Burma	Arakan Insurgents	1994	1994	1	3
1260	0	Burma	Burma	Various Insurgents	1948	1963	1	3
1260	0	Burma	Burma	NMSP	1990	1990	1	3
1340	0	Burma	Burma	PNDF	1949	1949	1	3
1340	1	Burma	Burma	KIO	1961	1975	3	3
1340	1	Burma	Burma	KIO	1976	1992	2	3
1560	0	Burma	Burma	KNPP	1957	1957	1	3
1560	1	Burma	Burma	KNPP	1992	1992	1	3
1560	1	Burma	Burma	KNPP	1996	1996	1	3
1670	0	Burma	Burma	SSA and SSIA	1960	1963	1	3
1670	0	Burma	Burma	SSA and SSIA	1964	1970	3	3
1670	0	Burma	Burma	SSNPLO, SSRA, MTA, and PSLO	1976	1988	2	3
1670	0	Burma	Burma	MTA	1994	1994	3	3
1670	0	Burma	Burma	MTA	1995	1995	2	3

1670	0 Burma	Burma	SSA, SURA, SSNA	1997	1999	2	3
1670	0 Burma	Burma	SSA, SURA, SSNA	2001	2001	2	3
1900	0 Burundi	Burundi	Military faction	1965	1965	1	3
1900	1 Burundi	Burundi	Ubumwé, Palipehutu, CNDD, Frolina, CNDD-FDD	1990	1992	1	3
1900	1 Burundi	Burundi	Ubumwé, Palipehutu, CNDD, Frolina, CNDD-FDD	1995	1996	1	3
1900	1 Burundi	Burundi	Ubumwé, Palipehutu, CNDD, Frolina, CNDD-FDD	1997	1997	2	3
1900	1 Burundi	Burundi	Ubumwé, Palipehutu, CNDD, Frolina, CNDD-FDD	1998	1998	3	3
1900	1 Burundi	Burundi	Ubumwé, Palipehutu, CNDD, Frolina, CNDD-FDD	1999	1999	2	3
1900	1 Burundi	Burundi	Ubumwé, Palipehutu, CNDD, Frolina, CNDD-FDD	2000	2001	3	3
2030	1 Cambodia	Cambodia, USA, South Vietnam	FUNK, North Vietnam	1970	1973	3	4
2030	1 Cambodia	Cambodia	FUNK, North Vietnam	1974	1975	3	4
2030	3 Cambodia	Cambodia, Vietnam	Khmer Rouge, FUNCINPEC, KPNLF	1979	1988	2	4
2030	0 Cambodia	Cambodia	Khmer Rouge	1967	1967	3	3
2030	0 Cambodia	Cambodia	Khmer Rouge	1968	1969	2	3
2030	2 Cambodia	Cambodia	KNUFNS	1978	1978	3	3
2030	3 Cambodia	Cambodia, Vietnam	KR/PDK, KPNLF, FUNCINPEC/ANS	1989	1989	3	4
2030	3 Cambodia	Cambodia, Vietnam	KR/PDK, KPNLF, FUNCINPEC/ANS	1990	1998	2	4
2590	0 Cameroon	Cameroon	Military faction	1984	1984	1	3
3250	0 Central African Republic	Central African Republic Libya	Military faction	2001	2001	1	4
1910	0 Chad	Chad	Various groups, Libya	1965	1988	3	4
1910	1 Chad	Chad	MDD (-FANT), CSNPD, CNR, FNT, FARF, MDJT	1991	1994	1	3
1910	1 Chad	Chad	MDD (-FANT), CSNPD, CNR, FNT, FARF, MDJT	1997	2001	1	3
1910	0 Chad	Chad	Military faction , MOSANAT, Islamic Legion, Libya	1989	1989	2	4
1910	0 Chad	Chad	Military faction , MOSANAT, Islamic Legion, Libya	1990	1990	3	4
2250	0 Chile	Chile	Military faction	1973	1973	1	3
1030	0 China	China	Peoples Liberation Army	1946	1949	3	3
1180	0 China	China	Taiwanese insurgents	1947	1947	3	3
1390	0 China	China	Tibet	1950	1950	1	3
1390	0 China	China	Tibet	1956	1956	3	3
1390	0 China	China	Tibet	1959	1959	3	3
1920	0 Colombia	Colombia	FARC , ELN , EPL , M-19	1965	1979	1	3
1920	0 Colombia	Colombia	FARC , ELN , EPL , M-19	1980	1988	2	3
1920	0 Colombia	Colombia	FARC , ELN, EPL, Faction of FARC	1989	1990	3	3
1920	0 Colombia	Colombia	Faction of ELN, MAO, Quintin Lame same groups as above	1991	1991	2	3

1920	0 Colombia	Colombia	same groups as above	1992	1993	3	3
1920	0 Colombia	Colombia	same groups as above	1994	1997	2	3
1920	0 Colombia	Colombia	same groups as above	1998	2001	3	3
2680	0 Comoros	Comoros	Presidential guard	1989	1989	1	3
3160	0 Comoros	Comoros	MPA	1997	1997	1	3
1680	0 Congo/Zaire	Congo/Zaire	Katanga	1960	1962	1	3
1690	0 Congo/Zaire	Congo/Zaire	Independent Mining State of South Kasai	1960	1962	1	3
1860	0 Congo/Zaire	Congo/Zaire	CNL	1964	1965	3	3
1860	1 Congo/Zaire	Congo/Zaire	Opposition militias	1967	1967	1	3
1860	1 Congo/Zaire	Congo/Zaire	FLNC	1977	1977	1	3
1860	1 Congo/Zaire	Congo/Zaire	FLNC	1978	1978	2	3
1860	2 Congo/Zaire	Congo/Zaire	AFDL, Rwanda, Angola	1996	1996	1	4
1860	2 Congo/Zaire	Congo/Zaire	AFDL, Rwanda, Angola	1997	1997	3	4
1860	2 Congo/Zaire	Congo/Zaire, Zimbabwe Angola, Namibia, Chad	RCD, RCD faction, MLC Rwanda, Uganda	1998	1999	3	4
1860	2 Congo/Zaire	Congo/Zaire, Zimbabwe Angola, Namibia	RCD, RCD faction, MLC Rwanda, Uganda	2000	2000	3	4
1860	2 Congo/Zaire	Congo/Zaire, Zimbabwe Angola, Namibia	RCD, RCD faction, MLC Rwanda, Uganda	2001	2001	2	4
3170	0 Congo-Brazzaville	Congo-Brazzaville	FDU, Angola	1997	1997	3	4
3170	0 Congo-Brazzaville	Congo-Brazzaville, Angola	Opposition militias	1998	1999	3	4
1270	0 Costa Rica	Costa Rica	National Liberation Army	1948	1948	3	3
2970	1 Croatia	Croatia	Serbian irregulars, Serbian Republic of Krajina, Yugoslavia	1993	1993	1	4
2970	0 Croatia	Croatia	Serbian irregulars, Serbian Republic of Krajina	1992	1992	1	3
2970	2 Croatia	Croatia	Serbian irregulars, Serbian Republic of Krajina	1995	1995	1	3
1450	1 Cuba	Cuba	National Revolutionary Council, USA	1961	1961	1	4
1450	0 Cuba	Cuba	Military faction	1953	1953	1	3
1450	0 Cuba	Cuba	Movimiento 26 De Julio: 26th of July Movement	1957	1957	1	3
1450	0 Cuba	Cuba	Movimiento 26 De Julio: 26th of July Movement	1958	1958	3	3
2270	0 Cyprus	Cyprus	Turkish Cypriots, Turkey	1974	1974	3	4
2860	0 Djibouti	Djibouti	FRUD	1991	1994	1	3
1930	0 Dominican Republic	Dominican Republic	Military faction	1965	1965	1	3
2980	0 Egypt	Egypt	al-Gamaa al-Islamiyya , al-Jihad al-Islamiy, Tala i al-Fath	1992	1998	1	3
2200	0 El Salvador	El Salvador	Military faction	1972	1972	1	3
2200	0 El Salvador	El Salvador	ERP , FAL, FARN, FPL, PRTC	1979	1980	1	3
2200	0 El Salvador	El Salvador	ERP , FAL, FARN, FPL, PRTC	1981	1990	3	3

2200	0 El Salvador	El Salvador	FMLN, Gerado Barrios Civic Front	1991	1991	2	3
2430	0 Equatorial Guinea	Equatorial Guinea	Military faction	1979	1979	1	3
1700	0 Ethiopia	Ethiopia	Military faction	1960	1960	1	3
1700	1 Ethiopia	Ethiopia	EPRP, TPLF , EPDM, OLF	1976	1991	3	3
2330	0 Ethiopia	Ethiopia, Cuba	WSLF	1975	1976	1	4
2330	0 Ethiopia	Ethiopia, Cuba	WSLF	1977	1978	3	4
1780	0 Ethiopia	Ethiopia	ELF , ELF factions, EPLF	1962	1967	1	3
1780	0 Ethiopia	Ethiopia	ELF , ELF factions, EPLF	1968	1973	2	3
1780	0 Ethiopia	Ethiopia	ELF , ELF factions, EPLF	1974	1991	3	3
2330	0 Ethiopia	Ethiopia, Cuba	WSLF	1979	1983	2	4
2330	1 Ethiopia	Ethiopia	ONLF	1996	1996	1	3
2330	1 Ethiopia	Ethiopia	ONLF	1998	2001	1	3
2690	0 Ethiopia	Ethiopia	ALF	1989	1991	1	3
2690	0 Ethiopia	Ethiopia	ARDUF	1996	1996	1	3
3140	0 Ethiopia	Ethiopia	al-Itahad al-Islami	1996	1997	1	3
3140	0 Ethiopia	Ethiopia	al-Itahad al-Islami	1999	1999	1	3
3220	0 Ethiopia	Ethiopia	OLF	1999	2001	1	3
1730	0 France	France	OAS	1961	1962	3	3
1870	0 Gabon	Gabon, France	Military faction	1964	1964	1	4
2500	0 Gambia	Gambia	SRLP	1981	1981	1	3
2870	0 Georgia	Georgia	Anti-government alliance	1991	1992	1	3
2870	1 Georgia	Georgia	Zviadists	1993	1993	1	3
2990	0 Georgia	Georgia	Republic of Abkhazia	1992	1992	1	3
2990	0 Georgia	Georgia	Republic of Abkhazia	1993	1993	3	3
3000	0 Georgia	Georgia	Republic of South Ossetia	1992	1992	1	3
1980	0 Ghana	Ghana	Military faction	1966	1966	1	3
1980	1 Ghana	Ghana	Military faction	1981	1981	1	3
1980	1 Ghana	Ghana	Military faction	1983	1983	1	3
1040	0 Greece	Greece	DSE	1946	1949	3	3
1360	0 Guatemala	Guatemala	Military faction	1949	1949	1	3
1360	0 Guatemala	Guatemala	Forces of Carlos Castillo Armas	1954	1954	1	3
1360	1 Guatemala	Guatemala	MR-13 , FAR , EGP , PGT , ORPA	1965	1967	1	3
1360	1 Guatemala	Guatemala	MR-13 , FAR , EGP , PGT , ORPA	1968	1968	2	3
1360	1 Guatemala	Guatemala	MR-13 , FAR , EGP , PGT , ORPA	1969	1987	3	3
1360	1 Guatemala	Guatemala	URNG	1988	1991	2	3
1360	1 Guatemala	Guatemala	URNG	1992	1992	3	3

1360	1 Guatemala	Guatemala	URNG	1993	1995	2	3
2110	0 Guinea	Guinea	Military faction	1970	1970	1	3
2110	1 Guinea	Guinea	Military faction	2000	2001	1	3
3190	0 Guinea-Bissau	Guinea-Bissau, Senegal, Guinea	Military faction	1998	1998	3	4
3190	0 Guinea-Bissau	Guinea-Bissau, Senegal, Guinea	Military faction	1999	1999	2	4
2880	0 Haiti	Haiti	Tonton Macoute/Military faction	1991	1991	1	3
1190	0 Hyderabad	Hyderabad	CPI	1947	1948	3	3
1290	0 India	India	CPI	1948	1951	3	3
1290	1 India	India	Naxalites/CPI (-Marxist)	1967	1972	1	3
1290	2 India	India	Naxalites/PWG, MCC	1989	1994	1	3
1290	2 India	India	Naxalites/PWG, MCC	1996	2001	1	3
1540	0 India	India	NNC, NSCN	1956	1959	1	3
1540	0 India	India	NNC, NSCN	1961	1968	1	3
1540	1 India	India	NNC, NSCN	1989	1997	1	3
1990	0 India	India	MNF	1966	1968	1	3
2390	0 India	India	TNV	1978	1988	1	3
2390	0 India	India	ATTF	1993	1993	1	3
2390	0 India	India	ATTF, NLFT	1995	2001	1	3
2530	0 India	India	PLA	1982	1989	1	3
2530	0 India	India	PLA	1991	1994	1	3
2530	0 India	India	UNLF, KNF, PLA	1997	2000	1	3
2570	0 India	India	Sikh insurgents	1983	1986	1	3
2570	0 India	India	Sikh insurgents	1987	1987	2	3
2570	0 India	India	Sikh insurgents	1988	1992	3	3
2570	0 India	India	Sikh insurgents	1993	1993	2	3
2700	0 India	India	Kashmir Insurgents	1989	1989	1	3
2700	0 India	India	Kashmir Insurgents	1990	1993	3	3
2700	0 India	India	Kashmir Insurgents	1994	1998	2	3
2700	0 India	India	Kashmir Insurgents	1999	2001	3	3
2710	0 India	India	ABSU, BPAC	1989	1990	1	3
2710	0 India	India	ULFA	1991	1991	3	3
2710	0 India	India	BDSF, ULFA, ULFA faction, BLTF, NDFB	1992	2001	2	3
3060	0 India	India	Jharkand Mukti Morcha	1993	1993	1	3
1400	0 Indonesia	Indonesia	Republic of South Moluccas	1950	1950	3	3
1460	0 Indonesia	Indonesia	Darul Islam Movement	1953	1953	3	3
1460	0 Indonesia	Indonesia	PRRI, Permesta movement, Darul Islam Movement	1958	1961	2	3

1940	0 Indonesia	Indonesia	OPM	1965	1965	1	3
1940	1 Indonesia	Indonesia	OPM	1976	1978	3	3
2340	0 Indonesia	Indonesia	Fretilin	1975	1978	3	3
2340	0 Indonesia	Indonesia	Fretilin	1979	1989	2	3
2340	0 Indonesia	Indonesia	Fretilin	1992	1992	2	3
2340	0 Indonesia	Indonesia	Fretilin	1997	1998	2	3
2720	0 Indonesia	Indonesia	GAM	1989	1989	1	3
2720	0 Indonesia	Indonesia	GAM	1990	1990	3	3
2720	0 Indonesia	Indonesia	GAM	1991	1991	2	3
2720	0 Indonesia	Indonesia	GAM	1999	2001	2	3
1060	0 Iran	Iran	Republic of Kurdistan/KDPI, Soviet Union	1946	1946	1	4
1070	0 Iran	Iran	Republic of Azerbaijan, Soviet Union	1946	1946	1	4
1060	1 Iran	Iran	KDPI	1966	1968	2	3
1060	1 Iran	Iran	KDPI	1979	1980	3	3
1060	1 Iran	Iran	KDPI	1981	1981	2	3
1060	1 Iran	Iran	KDPI	1982	1982	3	3
1060	1 Iran	Iran	KDPI	1983	1988	2	3
1060	1 Iran	Iran	KDPI	1990	1990	2	3
1060	1 Iran	Iran	KDPI	1993	1993	2	3
2440	0 Iran	Iran	Mujahideen e Khalq	1979	1980	1	3
2440	0 Iran	Iran	Mujahideen e Khalq	1981	1982	3	3
2440	0 Iran	Iran	Mujahideen e Khalq	1986	1988	2	3
2440	0 Iran	Iran	Mujahideen Khalq	1991	1993	2	3
2440	0 Iran	Iran	Mujahideen Khalq	2000	2001	2	3
2450	0 Iran	Iran	APCO	1979	1980	1	3
1620	0 Iraq	Iraq	Military faction	1958	1958	1	3
1620	0 Iraq	Iraq	Nationalists	1959	1959	1	3
1620	0 Iraq	Iraq	Military faction	1963	1963	1	3
1620	1 Iraq	Iraq	SAIRI	1982	1984	1	3
1620	1 Iraq	Iraq	SAIRI	1987	1987	1	3
1620	1 Iraq	Iraq	SAIRI	1991	1991	3	3
1620	1 Iraq	Iraq	SAIRI	1992	1996	2	3
1740	0 Iraq	Iraq	KDP, PUK	1961	1963	3	3
1740	0 Iraq	Iraq	KDP, PUK	1964	1964	2	3
1740	0 Iraq	Iraq	KDP, PUK	1965	1966	3	3
1740	0 Iraq	Iraq	KDP, PUK	1967	1968	2	3

1740	0 Iraq	Iraq	KDP, PUK	1969	1969	3	3
1740	0 Iraq	Iraq	KDP, PUK	1970	1970	2	3
1740	0 Iraq	Iraq	KDP, PUK	1973	1973	2	3
1740	0 Iraq	Iraq	KDP, PUK	1974	1975	3	3
1740	0 Iraq	Iraq	KDP, PUK	1976	1987	2	3
1740	0 Iraq	Iraq	KDP, PUK	1988	1988	3	3
1740	0 Iraq	Iraq	DPK , PUK	1989	1990	2	3
1740	0 Iraq	Iraq	DPK , PUK	1991	1991	3	3
1740	0 Iraq	Iraq	DPK , PUK	1992	1993	2	3
1370	0 Israel	Israel	Palestinian insurgents	1949	1954	1	3
1370	0 Israel	Israel	Palestinian insurgents	1955	1964	2	3
1370	0 Israel	Israel	PLO groups	1965	2001	2	3
2540	0 Kenya	Kenya	Military faction	1982	1982	1	3
1650	1 Laos	Laos, Thailand	Pathet Lao, Neutrals	1960	1961	3	4
1650	1 Laos	Laos, USA, South Vietnam	Pathet Lao, North Vietnam	1963	1968	3	4
1650	1 Laos	Laos, USA, South Vietnam, Thailand	Pathet Lao, North Vietnam	1969	1969	3	4
1650	1 Laos	Laos, USA, South Vietnam	Pathet Lao, North Vietnam	1970	1973	3	4
1650	0 Laos	Laos	Pathet Lao, Neutrals	1959	1959	3	3
1650	2 Laos	Laos	ULNLF	1989	1990	2	3
1630	0 Lebanon	Lebanon	Independent Nasserite Movement / Mourabitoun militia	1958	1958	3	3
1630	1 Lebanon	Lebanon	Various organizations, Syria, Israel	1975	1975	1	4
1630	1 Lebanon	Lebanon	Various organizations, Syria, Israel	1976	1976	3	4
1630	1 Lebanon	Lebanon	Various organizations, Syria, Israel	1977	1979	2	4
1630	1 Lebanon	Lebanon	Various organizations, Syria, Israel	1980	1982	3	4
1630	1 Lebanon	Lebanon	Various organizations, Syria, Israel	1983	1988	2	4
1630	1 Lebanon	Lebanon	Various organizations, Syria, Israel	1989	1990	3	4
3200	0 Lesotho	Lesotho	Military faction	1998	1998	1	3
2470	1 Liberia	Liberia	NPFL, Burkina Faso, INPFL	1990	1990	3	4
2470	1 Liberia	Liberia	NPFL, Burkina Faso, INPFL	1991	1991	2	4
2470	0 Liberia	Liberia	Military faction	1980	1980	1	3
2470	0 Liberia	Liberia	NPFL, INPFL	1989	1989	1	3
2470	2 Liberia	Liberia	NPFL, INPFL	1992	1992	3	3
2470	2 Liberia	Liberia	NPFL, INPFL	1993	1995	2	3
2470	3 Liberia	Liberia	Ulimo-J	1996	1996	1	3
2470	3 Liberia	Liberia	LURD	2000	2001	1	3

3260	0 Macedonia	Macedonia	UCK (Ushtria Çlirimtare Kombetare: National Liberation Army)	2001	2001	1	3
2140	0 Madagascar	Madagascar	Monima National Independence Movement	1971	1971	1	3
1640	0 Malaysia	Malaysia, UK	Communist Party of Malaya	1958	1960	1	4
1640	1 Malaysia	Malaysia	CPM	1974	1975	1	3
1640	1 Malaysia	Malaysia	CPM	1981	1981	1	3
1830	0 Malaysia	Malaysia	CCO	1963	1966	1	3
2790	0 Mali	Mali	MPA	1990	1990	1	3
2790	0 Mali	Mali	FIAA	1994	1994	1	3
3080	0 Mexico	Mexico	EZLN	1994	1994	1	3
3010	0 Moldova	Moldova	Dniestr Republic	1992	1992	1	3
2350	0 Morocco	Morocco, Mauritania	POLISARIO	1975	1979	3	4
2150	0 Morocco	Morocco	Military faction	1971	1971	1	3
2350	1 Morocco	Morocco	POLISARIO	1980	1980	3	3
2350	1 Morocco	Morocco	POLISARIO	1981	1989	2	3
2360	0 Mozambique	Mozambique	Renamo	1976	1980	1	3
2360	0 Mozambique	Mozambique	Renamo	1981	1992	3	3
1720	0 Nepal	Nepal	Nepali Congress	1960	1962	1	3
1720	1 Nepal	Nepal	CPN-M/UPF	1997	2000	1	3
1720	1 Nepal	Nepal	CPN-M/UPF	2001	2001	2	3
2400	0 Nicaragua	Nicaragua	FSLN	1978	1979	3	3
2400	1 Nicaragua	Nicaragua	Contras	1981	1982	1	3
2400	1 Nicaragua	Nicaragua	Contras	1983	1988	3	3
2400	1 Nicaragua	Nicaragua	FDN or Contras	1989	1989	2	3
2800	0 Niger	Niger	FLAA	1990	1992	1	3
2800	0 Niger	Niger	CRA	1994	1994	1	3
2800	0 Niger	Niger	UFRA	1997	1997	1	3
3150	0 Niger	Niger	FDR	1996	1996	1	3
3150	0 Niger	Niger	FARS	1997	1997	1	3
2000	0 Nigeria	Nigeria	Military faction	1966	1966	1	3
2070	0 Nigeria	Nigeria	Republic of Biafra	1967	1970	3	3
1610	0 Oman	Muscat and Oman, UK	State of Oman/Free Oman	1957	1957	1	4
2210	0 Oman	Oman, Iran, Jordan, UK	PFLOAG, South Yemen	1972	1975	1	4
2160	0 Pakistan	Pakistan	Mukti Bahini: Liberation Force	1971	1971	3	3
2290	0 Pakistan	Pakistan	Baluchi separatists	1974	1974	3	3
2290	0 Pakistan	Pakistan	Baluchi separatists	1975	1977	2	3
3120	0 Pakistan	Pakistan	MQM	1995	1996	1	3

2740	0 Panama	Panama	Military faction	1989	1989	1	3
2760	0 Papua New Guinea	Papua New Guinea	BRA	1989	1990	1	3
2760	0 Papua New Guinea	Papua New Guinea	BRA	1992	1996	1	3
1220	0 Paraguay	Paraguay	Opposition coalition (Febreristas, Liberals and Communists)	1947	1947	3	3
1220	1 Paraguay	Paraguay	Military faction	1954	1954	1	3
1220	2 Paraguay	Paraguay	Military faction	1989	1989	1	3
1950	0 Peru	Peru	MIR , Túpac Amaru , ELN	1965	1966	1	3
1950	1 Peru	Peru	Sendero Luminoso	1980	1980	1	3
1950	1 Peru	Peru	Sendero Luminoso	1981	1985	3	3
1950	1 Peru	Peru	Sendero Luminoso	1986	1987	2	3
1950	1 Peru	Peru	Sendero Luminoso, Sendero Rojo, MRTA	1988	1992	3	3
1950	1 Peru	Peru	Sendero Luminoso, Sendero Rojo, MRTA	1993	1999	2	3
1100	0 Philippines	Philippines	Huk	1946	1954	3	3
1100	1 Philippines	Philippines	NPA	1972	1980	1	3
1100	1 Philippines	Philippines	NPA	1981	1981	2	3
1100	1 Philippines	Philippines	NPA	1982	1986	3	3
1100	1 Philippines	Philippines	NPA	1987	1988	2	3
1100	1 Philippines	Philippines	NPA, RAM-SFP, Military faction	1989	1992	3	3
1100	1 Philippines	Philippines	NPA, RAM-SFP, Military faction	1993	1994	2	3
1100	1 Philippines	Philippines	NPA	1999	2001	2	3
2120	0 Philippines	Philippines	MNLF	1970	1971	1	3
2120	0 Philippines	Philippines	MNLF	1972	1977	2	3
2120	0 Philippines	Philippines	MNLF	1978	1978	3	3
2120	0 Philippines	Philippines	MNLF	1979	1980	2	3
2120	0 Philippines	Philippines	MNLF	1981	1981	3	3
2120	0 Philippines	Philippines	MNLF	1982	1988	2	3
2120	0 Philippines	Philippines	Abu Sayyaf, MILF	1994	1999	2	3
2120	0 Philippines	Philippines	Abu Sayyaf, MILF	2000	2000	3	3
2120	0 Philippines	Philippines	Abu Sayyaf, MILF	2001	2001	2	3
2220	0 Rhodesia	Rhodesia	ZANU , ZAPU	1972	1975	1	3
2220	0 Rhodesia	Rhodesia	ZANU , ZAPU	1976	1979	3	3
2770	0 Romania	Romania	National Salvation Front	1989	1989	1	3
3070	0 Russia	Russia	Parliamentary forces	1993	1993	1	3
3090	0 Russia	Russia	Republic of Chechnya	1994	1994	1	3
3090	0 Russia	Russia	Republic of Chechnya	1995	1996	3	3
3090	0 Russia	Russia	Republic of Chechnya	1999	2001	3	3

3230	0 Russia	Russia	Republic of Dagestan	1999	1999	1	3
2810	0 Rwanda	Rwanda	FPR	1990	1990	1	3
2810	0 Rwanda	Rwanda	FPR	1991	1992	3	3
2810	0 Rwanda	Rwanda	FPR	1993	1994	2	3
2810	0 Rwanda	Rwanda	Opposition alliance	1998	1998	3	3
2810	0 Rwanda	Rwanda	Opposition alliance	1999	2000	2	3
2810	0 Rwanda	Rwanda	Opposition alliance	2001	2001	3	3
2460	0 Saudi Arabia	Saudi Arabia	Juhayman Movement	1979	1979	1	3
2820	0 Senegal	Senegal	MFDC	1990	1990	1	3
2820	0 Senegal	Senegal	MFDC	1992	1993	1	3
2820	0 Senegal	Senegal	MFDC	1995	1995	1	3
2820	0 Senegal	Senegal	MFDC	1997	2001	2	3
2890	0 Sierra Leone	Sierra Leone	RUF, AFRC, ECOMOG, Kamajors	1991	1993	1	3
2890	0 Sierra Leone	Sierra Leone	RUF, AFRC, ECOMOG, Kamajors	1994	1997	2	3
2890	0 Sierra Leone	Sierra Leone	RUF, AFRC, ECOMOG, Kamajors	1998	1999	3	3
2890	1 Sierra Leone	Sierra Leone, United Kingdom	RUF, AFRC, ECOMOG, Kamajors	2000	2000	2	4
2410	0 Somalia	Somalia	Military faction	1978	1978	1	3
2410	0 Somalia	Somalia	SSDF , SNM, SPM	1981	1986	1	3
2410	0 Somalia	Somalia	SSDF , SNM, SPM	1987	1988	2	3
2410	0 Somalia	Somalia	SNM , Military faction , SSDF , USC, USC faction	1989	1992	3	3
2410	0 Somalia	Somalia	SNM , Military faction , SSDF , USC, USC faction	1993	1996	2	3
2010	0 South Africa	South Africa	SWAPO	1966	1978	1	3
2010	0 South Africa	South Africa	SWAPO	1979	1979	2	3
2010	0 South Africa	South Africa	SWAPO	1980	1983	3	3
2010	0 South Africa	South Africa	SWAPO	1984	1985	2	3
2010	0 South Africa	South Africa	SWAPO	1986	1988	3	3
2510	0 South Africa	South Africa	ANC, PAC, Azapo	1981	1988	1	3
2510	0 South Africa	South Africa	ANC, PAC, Azapo	1989	1993	3	3
1320	0 South Korea	South Korea, USA	Leftist insurgents (e.g. Inmin-gun: Peoples Army, military faction)	1948	1950	3	4
1520	0 South Vietnam	South Vietnam, USA	FNL	1962	1964	3	4
1520	0 South Vietnam	South Vietnam	FNL	1955	1961	3	3
1110	0 Soviet Union	Soviet Union	Forest Brothers	1946	1948	2	3
1120	0 Soviet Union	Soviet Union	LTS(p)A, LNJS, and LNPA	1946	1947	2	3
1130	0 Soviet Union	Soviet Union	BDPS	1946	1947	3	3
1130	0 Soviet Union	Soviet Union	BDPS	1948	1948	2	3
1140	0 Soviet Union	Soviet Union	UPA	1946	1948	3	3

1140	0 Soviet Union	Soviet Union	UPA	1949	1950	2	3
2830	0 Soviet Union	Soviet Union	Government of Armenia and ANM	1990	1991	1	3
2840	0 Soviet Union	Soviet Union	Azerbaijani Popular Front	1990	1990	1	3
2480	0 Spain	Spain	ETA	1980	1981	1	3
2480	0 Spain	Spain	ETA	1987	1987	1	3
2480	0 Spain	Spain	ETA	1991	1992	1	3
2170	0 Sri Lanka	Sri Lanka	JVP	1971	1971	3	3
2170	1 Sri Lanka	Sri Lanka	JVP	1989	1989	3	3
2170	1 Sri Lanka	Sri Lanka	JVP	1990	1990	2	3
2580	0 Sri Lanka	Sri Lanka	LTTE, TELO, PLOTE	1983	1984	1	3
2580	0 Sri Lanka	Sri Lanka	LTTE, TELO, PLOTE	1985	1988	2	3
2580	0 Sri Lanka	Sri Lanka	LTTE	1989	1993	3	3
2580	0 Sri Lanka	Sri Lanka	LTTE	1994	1994	2	3
2580	0 Sri Lanka	Sri Lanka	LTTE	1995	2001	3	3
1850	0 Sudan	Sudan	Anya Nya	1963	1972	3	3
1850	1 Sudan	Sudan	SPLM	1983	1992	3	3
1850	1 Sudan	Sudan	SPLM, Faction of SPLM, NDA	1993	1994	2	3
1850	1 Sudan	Sudan	SPLM, Faction of SPLM, NDA	1995	2001	3	3
2130	0 Sudan	Sudan	Sudanese Communist Party	1970	1970	1	3
2130	0 Sudan	Sudan	Islamic Charter Front	1976	1976	1	3
2630	0 Surinam	Surinam	SLA/Jungle Commando	1986	1988	1	3
2020	0 Syria	Syria	Military faction	1966	1966	1	3
2020	1 Syria	Syria	Muslim Brotherhood	1979	1981	1	3
2020	1 Syria	Syria	Muslim Brotherhood	1982	1982	3	3
3020	1 Tajikistan	Tajikistan, Russia, Uzbekistan	UTO	1993	1993	3	4
3020	1 Tajikistan	Tajikistan, Russia, Uzbekistan	UTO	1994	1994	2	4
3020	1 Tajikistan	Tajikistan, Russia	UTO	1995	1996	2	4
3020	0 Tajikistan	Tajikistan	UTO	1992	1992	3	3
3020	2 Tajikistan	Tajikistan	Movement for Peace in Tajikistan	1998	1998	1	3
1430	0 Thailand	Thailand	Military faction (Navy)	1951	1951	1	3
1430	1 Thailand	Thailand	CPT	1974	1982	2	3
2640	0 Togo	Togo	MTD	1986	1986	1	3
2640	0 Togo	Togo	Military faction	1991	1991	1	3
2850	0 Trinidad and Tobago	Trinidad and Tobago	Jamaat al-Muslimeen	1990	1990	1	3
2490	0 Tunisia	Tunisia	Résistance Armée Tunisienne	1980	1980	1	3
2600	0 Turkey	Turkey	PKK	1984	1986	1	3

2600	0 Turkey	Turkey	PKK	1987	1991	2	3
2600	0 Turkey	Turkey	PKK	1992	1997	3	3
2600	0 Turkey	Turkey	PKK	1998	2001	2	3
2900	0 Turkey	Turkey	Devrimci Sol	1991	1992	1	3
2180	1 Uganda	Uganda, Libya	UNLA , Tanzania	1978	1978	1	4
2180	1 Uganda	Uganda, Libya	UNLA , Tanzania	1979	1979	3	4
2180	0 Uganda	Uganda	Military faction	1971	1971	1	3
2180	0 Uganda	Uganda	UPA	1972	1972	1	3
2180	0 Uganda	Uganda	Military faction	1977	1977	1	3
2180	2 Uganda	Uganda	NRA, UFM, UPM, UNRF, UFDM, UPF, UPDA, UPC, UNLA, FOBA, HSM	1981	1988	3	3
2180	2 Uganda	Uganda	Faction of UPDA, UPA, HSM, UDCM, UPDCA	1989	1989	3	3
2180	2 Uganda	Uganda	Faction of UPDA, UPA, HSM, UDCM, UPDCA	1990	1990	2	3
2180	2 Uganda	Uganda	Faction of UPDA, UPA, HSM, UDCM, UPDCA	1991	1991	3	3
2180	3 Uganda	Uganda	LRA, WNBF, ADF	1994	1995	1	3
2180	3 Uganda	Uganda	LRA, WNBF, ADF	1996	2001	2	3
2190	0 United Kingdom	United Kingdom	PIRA	1971	1977	1	3
2190	0 United Kingdom	United Kingdom	PIRA	1978	1993	2	3
2190	0 United Kingdom	United Kingdom	Real IRA	1998	1998	2	3
2230	0 Uruguay	Uruguay	MLN or Tupamaros	1972	1972	1	3
3270	0 USA	USA, Australia, Canada, France Germany, Italy, Japan, Jordan Netherlands, Poland, Russia, Turkey, UK	al-Qaida (The Base)	2001	2001	3	4
3240	0 Uzbekistan	Uzbekistan, Kyrgyzstan	MIU	2000	2000	1	4
1800	0 Venezuela	Venezuela	Military faction	1962	1962	1	3
1800	1 Venezuela	Venezuela	Military faction	1992	1992	1	3
3100	0 Yemen	Yemen	Democratic Republic of Yemen	1994	1994	3	3
1330	0 Yemen (North)	Yemen (North)	Opposition coalition	1948	1948	3	3
1330	2 Yemen (North)	Yemen (North)	National Democratic Front	1980	1982	1	3
1330	1 Yemen (North)	Yemen (North), Egypt	Royalists	1962	1964	3	4
1330	1 Yemen (North)	Yemen (North), Egypt	Royalists	1965	1965	2	4
1330	1 Yemen (North)	Yemen (North), Egypt	Royalists	1966	1967	3	4
1330	1 Yemen (North)	Yemen (North), Egypt	Royalists	1968	1970	2	4
2650	0 Yemen (South)	Yemen (South)	Faction of Yemenite Socialist Party	1986	1986	3	3
2910	0 Yugoslavia	Yugoslavia	Republic of Slovenia	1991	1991	1	3
2920	0 Yugoslavia	Yugoslavia	Republic of Croatia, Croatian irregulars	1991	1991	3	3

3210	1 Yugoslavia	Yugoslavia	UCK, Belgium, Canada, Czech Rep ,Denmark ,France ,Germany Greece, Hungary, Iceland, Italy, Luxembourg, Netherlands, Norway Polen, Portugal ,Spain ,Turkey ,United Kingdom ,United States	1999	1999	3	4
3210	0 Yugoslavia	Yugoslavia	UCK	1998	1998	3	3

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